Volume III.

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1915.

No. 562.

THE UNITED STATES, PLAINTIFF IN ERROR,

vs.

FORTY BARRELS AND TWENTY KEGS OF COCA COLA, THE COCA COLA COMPANY OF ATLANTA, GEORGIA, CLAIMANT, AND INTERVENOR.

IN ERROR TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

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bases. There was no precipitate and therefore there could not have been any of these other products present. Then the crystal responded to the meuraxic test.

Q. Did you find any other ingredient in either of the subsequent tests that you did not find in the original?

A. The first time I tested the syrup for caffeine, alcohol and for cocaine, I found no cocaine present. The second time I do not believe I tested the Coca Cola for cocaine. I do not think I did. I would have to look that up.

Q. Have you copies or notes to which you could refer so that you could tell us what you did find in those two subsequent tests?

A. I tested for caffeine and I reported that I found in one .21 of one per cent., and in the other .19 of one per cent. caffeine.

Q. I am not asking you specifically as to that but I ask you if you found any other ingredient in the subsequent tests that you did not find in the original.

A. I do not know that I quite follow your question.

Q. You made one analysis.

A. Yes, sir.

Q. Then you made two following.

A. Yes, sir.

Q. I want to know whether you are prepared to state that the contents of the three samples which you thus analyzed were the same, barring the difference in caffeine content which you have already stated.

A. I could not answer that for this reason: That the first analysis I made of caffeine only went into the question of caffeine content, but whether there was cocaine in there and the per cent of alcohol also was gone into. In the last two analyses I made of the syrup I determined the amount of caffeine and alcohol percentages, the amount of sugar and the acidity, I believe.

Q. Could you give the stenographer the results of your two subsequent analyses?

A. I think I can.

Q. Kindly read them off to him; you have them there and they are short, let us see what you found.

A. The fountain Coca Cola syrup ——

Specific gravity at 15° C, 1.2636.

Total solids, 56.3.

Ash, 1.65.

Absolute alcohol by volume, 5.9.

Reducing sugar after inversion, 50.2.

Acidity expressed in c. c. decinormal alkali for 100 c. c. syrup, 85 c. c.

Caffeine content, 2.1.

Glycerin, a trace.

Phosphoric acid, 1.21.

Q. And your other one differs from that only in the percentage of caffeine?

A. From the first one?

Q. From that second one?

A. The first one had .2 of one per cent. and the second .21 of one per cent.

Q. The only difference in the next one is in the percentage of caffeine?

A. There is more sugar. I find here about 56 per cent. of reducing sugar after inversion.

Q. Barring the sugar and caffeine content you found no material differences between the second and third, is that right?

A. Well, no—no material difference between the second and third; that is, the fountain syrup contained a little more caffeine and a little less sugar than the bottled.

Q. How much alcohol did you find in the second and third?

A. I do not know what you mean by second and third. But the fountain syrup contained .59 of one per cent. alcohol by volume, and in the bottlers' Coca Cola syrup .48 of one per cent alcohol by volume.

Q. Now, in your first report made on April 15, I find this language and which you say is correct:

> "The contents of this jug were submitted to very careful and exhaustive analysis for cocaine and alcohol and we failed to find any trace of either."

So that you did not find any alcohol in one of these samples and you did find as much as .59 of one per cent. in one of them and probably more than that in the other, is that right?

A. I do not know whether that is in the paper.

Q. That is what is in this paper you wrote and I pass it to you again to let you see if you didn't sign it.

A. I guess that is right. I remember it now.

Q. Now, as a matter of fact, is not the alcoholic test—the test for determining the alcoholic content, about one of the easiest known to a chemist?

A. It is when you have enough alcohol but when you get to .2 of one per cent., it is pretty much of a guess.

Q. How did you get it in the subsequent tests——

A. I would not swear that was absolutely correct as to alcohol but I followed the official chemists' methods, which are the methods to be used in making these tests under the Food and Drugs Act.

Q. And that is what you——

A. I have not finished yet.

Q. All right.

A. And I followed out those directions to the letter, and that is the result I got. Now, I did not separate the alcohol as a separate entity so that I could swear exactly what I got in the distillate was alcohol but I followed the official methods.

Q. What you mean is that you took somebody else's formula and applied it and in one instance you got absolutely no trace of alcohol and so wrote and it has been published all over the country, and in the other two instances you did find alcohol and you say that is one of the easiest tests known?

A. It is one of the easiest tests known when there is sufficient alcohol present to change the specific gravity of the water. The method I used was the method used by the official chemist, — and are to govern in the enforcement of the Food and Drugs Act, and if it errs it is not my fault.

Q. If there was error and you followed the same formula or test each time and there was error committed, you attribute that to the formula rather than to yourself or your force?

A. I attribute it wholly and entirely to the method.

Q. And yet you followed the same method each time?

A. As far as I know, it is the only method that we can use.

Q. If a mistake was made, you would attribute it to the method rather than to you or your force?

A. I would not call it a mistake.

Q. An error, then?

A. I would not call it an error. I would call it one of the possibilities that will always happen when you have from two to three or one-tenth per cent of alcohol.

Q. If an error would be committed to the extent of .75 of one per cent. of alcohol, and alcohol is the easiest test that you have, then I ask you in your opinion would it not logically follow that a like error or an error of that kind might follow as to the other ingredients of this mixture?

A. No, sir. In the first place I do not know where you get your .75 of one per cent.

Q. You said from .59 to .75 of one per cent.?

A. No, sir; I said from .48 to .59.

Q. Well, put it from .48 to .59, practically one-half of one per cent. In that case the alcohol was determined by test?

A. Yes, sir. And it was determined by taking the specific gravity of that distillate where the caffeine was taken out and weighed — the substance, the identical thing was

weighed.

Q. Do you or not state that the method you followed in making these analysis was a correct one, or was it not — was it a proper one or not?

A. It was a correct one but I do not think there are any two analysts who could take Coca Cola syrup and get identically the same amount of alcohol. I think there would be a variation in the trace of alcohol all the way from .50 to 1.00 per cent.

Q. If there would be, then why didn't you find it when you dictated the certificate to the Coca-Cola Company?

A. I didn't find any in there.

Q. Then would you not say now that any other two analysts would disagree, varying from .50 to 1.00 per cent because you did not find any ——

A. I didn't find any in that particular sample.

The Court: I think that is sufficient on that.

BY MR. MILLER:

Q. How long were you in conducting that experiment on the first gallon of Coca-Cola mixture where you reported no alcohol?

A. I think I probably spent ten days on that.

Q. How was it you were able to say on yesterday and reiterate to-day that you made that test on April 15, 1907? And that is the exact date of your letter to The Coca-Cola Company.

A. It was sent out on that day.

Q. But you were asked when you made that test.

A. It was finished on that day.

Q. Then you did not make your test on April 15?

A. Yes, sir; part of it, the final result.

The Court: I think that is entirely immaterial.

Mr. Miller: From our point of view it is quite material to show the length of time consumed.

The Court: I do not see the materiality.

BY MR. MILLER:

Q. Do you say you can take a bottle or a jug of Coca-Cola syrup and analyze it and make a report in a day?

A. I should say not.

Q. That is what I thought.

A. And I do not say that I made it on that day. My report card shows it went out on April 15, that I reported it on that day.

Q. What kind of chloroform was used in extracting caffeine?

A. Merck's pure chloroform.

Q. Did you test it?

A. I would not say that I tested this particular sample of chloroform but it was tested in so far as many evaporations were made to show that the chloroform contained no residue.

Q. I ask you if you tested it or witnessed a test.

A. I was present when the test was made and it was labeled "Chemically Pure."

Q. What has been your experience as a pharmacologist?

A. I don't think I have had any experience in pharmacology.

Q. You do not belong to any pharmacological societies and have not investigated the matter of pharmacological research?

A. Not as the term is generally understood. I have not practiced pharmacology or made any experiments.

Q. Pharmacology is that science which deals with experiments of drugs on animals and their physiological action.

A. As far as it goes into physiological chemistry, I have had considerable experience in that line but as to the function or the results produced on animals by those drugs, I have not made a study of that.

Q. Then you undertake to say you experimented on animals with drugs such as caffeine when you did not know the effect of the drugs on the animals and never studied pharmacology at all, and you come here and attempt to give an opinion based on that?

A. The inquiries which I made as to the caffeine feeding to animals was to find out whether the caffeine was destroyed in the body. Secondly, if there was any caffeine excreted as such or left in a free condition in any part of the body. And, third, to see whether there were any changes produced in the organs or economies of the animal while being fed caffeine. I was not inquiring as to the stimulating effects or the action on the central nervous system or on the muscles or kidneys from a pharmacological standpoint.

Q. Then you do not mean to be understood as stating from your experimentation on these five or six rabbits what the effect was on the central nervous system, on the cord or brain or any other particular function of the body?

A. I would not want to state it as a scientific pharmacologist by any means but I will state that I did not see any action on the central nervous system of the rabbits served with caffeine, only a few instances of the dieuretic action after the first or second dose.

Q. That was the dieuretic action that you refer to?

A. Yes, sir; influence on the kidney.

Q. Do you mean to go on record as saying there was no result apparent on the nervous system or the respiratory or circulatory system, and if you do, to what do you ascribe the warmth of the rabbit's ears and the increased palpitation when you gave it caffeine?

A. I did not say it had increased palpitation.

D. Didn't you say that?

A. No, sir. I said there was some difficulty in breathing in the first dose given. I didn't say anything about palpitation.

Q. To what do you ascribe the increased warmth in the ears and also the difficulty in breathing after you gave the caffeine, if it didn't have any effect on the central nervous system, or the cord or brain or any other function of the body?

A. The caffeine must have had some stimulating effect on the centers which control the breathing apparatus of the animal.

Q. What are those?

A. I do not know. I could not pick out that nerve. I leave that to the pharmacologists.

Q. To what do you ascribe that increased warmth of the animal's ears that you found after you gave him the caffeine?

A. I do not know just how to explain it. I do not know that any body can and I would not attempt it.

Q. Do you not know how to explain it?

A. No sir; I have no theory on that.

Q. You witnessed the fact that you do not know how to explain it?

A. I do not like to talk about theories. I would sooner talk about the facts I have discovered in research in a chemical way.

Q. Who was this Mr. Hooper, what connection did he have with the Coca-Cola Company, that engaged you to make this first analysis?

A. His name was Harper.

Q. Harper, then.

A. I don't know just what connection he had with The Coca-Cola Company.

Q. Well, in response to his engagement you wrote a letter dated April 13 directly to The Coca-Cola Company at 1222 Wabash avenue, Chicago, didn't you?

A. Yes, sir; I believe he asked me to make out my report to The Coca-Cola Company, if I remember rightly.

Q. Now, under what circumstances and how did you

test what you referred to on yesterday as the cocoa nibs, to ascertain the contents?

A. Well, I didn't say that I had recently made a test of the cocoa nibs.

Q. I know, but you undertook to tell what was in them and I want to know if that was from your personal observation. You told the jury what was in them.

A. I have made tests for the amount of caffeine in chocolate, years ago, but I do not remember how much was present, now.

Q. But —

A. But if you want me to tell how, I can do so.

Q. I asked you under what circumstance and when you made the test to ascertain what was in the cocoa nibs, and I will ask you in that same connection what you found.

A. Well, I didn't since — I do not know when I made this test, I know I made it some time or maybe several times within the last ten or twelve years, and in those coca nibs, as I recollect,—that is, the chocolate is made from coca nibs—there is found not only theobromine but also caffeine.

Q. What is the difference between chocolate and coca nibs?

A. Well, the coca nib is the seed of the chocolate, ground into a sort of paste and then mixed with cane sugar, which makes the chocolate, and sometimes a spice is added to it that makes chocolate, commonly sold as chocolate.

Q. And that is spelled c-o-c-o-a?

A. Yes, sir.

Q. Coca?

A. Yes, sir.

Q. You never saw one of these coca trees growing in your life?

A. I don't think I have; no, sir.

Q. And in the process of your testing, if you made a test at all, you used a test that is applicable for determining what percentage of caffeine or theobromine is in the finished product known as chocolate?

A. I have taken the finished product and tested that; I think I made a test of the coca nibs, but I won't be certain about that.

Q. You won't be certain about that?

A. Whether the coca nibs as such also, whether I tested them as such, I don't recollect.

Q. Is there any means of isolating the caffeine that might exist in the coca leaves, if there be such, from any that may be added in the making of the chocolate where a

certain proportion of the nib is utilized, and if so, did you attempt to isolate or distinguish that from the other?

A. There would be no way of isolating the caffeine put in the chocolate and separating it from the caffeine which naturally is in the coca nibs from which the chocolate is made.

Q. And then you don't know what proportion of the caffeine contents of chocolate, if any, you found had been added in the process of making, and that which was inherently in the coca nibs, if any?

A. If any caffeine had been put into chocolate mixture I could not tell whether it had been put in or whether it existed there.

Q. You did not see the chocolate manufactured, of course?

A. No, sir.

Q. Is there any difference in the solubility or relative solubility of caffeine and theobromine, and if so, what?

A. I think caffeine is more soluble than theobromine.

Q. And which is the more stimulating on the nervous system?

A. Caffeine, I understand.

Q. Well, you are speaking then from what you have read?

A. From what I have read and the little experience I have had on myself and some of my friends.

Q. You did not mean to say that theobromine, yesterday, stimulated to the extent of caffeine — stimulated the nervous system?

A. I didn't say that it did.

Q. I thought you stated that they both stimulated the nervous system alike.

A. No, sir; I said nothing of the kind. I said it had much less action on the central nervous system.

Q. Then if the stenographer wrote your testimony that they both alike stimulated the nervous system, you did not mean to be understood that way?

A. Yes, sir, I did not mean to be understood that way; caffeine acts upon the nervous system and theobromine very little, theobromine is very much more of a muscle stimulant than caffeine.

Q. How does theobromine act on the muscles, Doctor?

A. Well, I am not a pharmacologist and I do not know just how that chemistry takes place. I do not know whether a pharmacologist could explain that, just what takes place there when that theobromine solution touches that muscle fibre.

Q. How do you know? That is what I want to know.

A. I do not know, and I do not know that anyone does.

Q. But you do?

A. I don't know how that works, and then just what chemical process it goes through in making that muscle contract, to be a stimulant.

Q. Then when you said yesterday that it was a nerve stimulant, you were simply stating what you had heard and read?

A. And what I have seen and what I observed myself, speaking about caffeine nerve stimulants.

Q. I am talking about theobromine.

A. I have not said it acted very much on the central nervous system, but that it acts as a muscle stimulant.

Q. I am talking about that also — I will ask you how you know it acts on the muscular system, how you know it?

A. Well, I don't know just how it acts upon the muscles, but I believe it is the theobromine and possibly the paraxanthine from caffeine which is taken that acts upon the muscle. I do not think caffeine at all when given by mouth acts on the muscle.

Q. But caffeine broken up, when broken up, parts of it become paraxanthine?

A. And theobromine.

Q. You think it is the theobromine and paraxanthine portion that acts on the muscle?

A. Yes, sir; which I believe is originated out of the caffeine if given by mouth.

Q. It springs from the caffeine?

A. Yes, sir; —

Q. And is the mother —

A. (Interrupting) That is the basic substance from which these others arise. I will put it that way.

Q. Is there any difference except one of degree or intensity in taking it by mouth and injecting it into the blood stream?

A. Well, yes; I would say that by giving caffeine in the blood stream you get the full effect of the caffeine and that the picture may be the same as one given by mouth but only more intense, but you can't swear that it is caffeine that acts upon the muscles when you give it by mouth. As I have stated, from my experiments on rabbits I do not know that it is caffeine, I do not believe it is caffeine that acts on the muscles, but I believe it is a theobromine, the same stuff we have in chocolate, and paraxanthine, which is identical with theobromine that acts upon the muscles, and in that I do not think one would be justified in assuming that giving it by hyperdermic injection or introducing it directly into the blood has the same action as when you

give it by mouth.

Q. Are you prepared to draw any distinction, and if so, how?

A. I say, if caffeine is given by mouth it is the theobromine and paraxanthine which renders more stimulated the muscles — that acts as a muscular stimulant.

Q. If it is given by injection, what is it that acts as that stimulant?

A. I will say in that case no doubt the caffeine, too.

Q. What are the ingredients —

A. (Interrupting) The same, theobromine and paraxanthine, which would naturally be formed out of caffeine, even in the blood stream.

Q. Then it is broken up into these bodies and they are brought in contact with the muscle?

A. Yes, sir; and of course it has in passing through the alimentary tract or the thoracic duct, and through all these avenues, I don't know how much of the caffeine is changed into these other lesser methylated xanthine bodies.

Q. And the length of time which it requires the caffeine to be brought in contact with muscle depends on the rate of solution?

A. Yes, sir; that is quite variable.

Q. And when you take it in the stomach it is absorbed in the blood stream?

A. I don't know whether it is absorbed from the stomach or not. It may not be absorbed until it gets into the smaller intestines.

Q. You are not prepared to speak on that?

A. Yes, sir; I think I am. I don't think I can answer—

Q. What are your experiments on that point?

A. Well, I have given potassium iodine in capsule and tested —

Q. (Interrupting) I object to that. I am talking about caffeine.

A. I have to tell you about my observation on the absorption of the stomach.

Q. I am talking about the absorption of caffeine.

A. Well, I have to first answer that by giving you my observation on the absorption of that.

Q. I don't want that as to any other drugs. Different drugs act differently and are absorbed at varying intervals, and you know that as a chemist and a pharmacologist and a doctor of medicine.

A. Well, I am not a pharmacologist.

Q. Well, as a doctor of medicine, Doctor Wesener, you know that different drugs are absorbed at variable intervals and in variable proportions, don't you?

A. Are you referring to the stomach?
Q. Yes.
A. No, not by the stomach as an organ — material that goes into the stomach is not absorbed from the stomach; very few such materials are absorbed from the stomach directly, most of the absorption takes place from the small intestines.
Q. Are you prepared to say that caffeine is or is not absorbed from the stomach?
A. I am not prepared to say as to whether it is or not — I don't know. I don't know as anyone knows.
Q. All right then — does not the administration of caffeine have any action on the kidneys, any dieuretic action?
A. In moderate doses it might have a stimulant action on the kidneys but not much of a dieuretic action. It did not act that way on the rabbit where I gave large doses, or enormous doses.
Q. You found an increase of urine at the beginning of the administration, I believe you said.
A. There was diuresis once or twice after the first two doses.
Q. And what do you mean by diuresis?
A. The urine — urinated in thirty or forty minutes after the dose.
Q. And that showed that the action of this drug was in part on the kidneys?
A. That particular dose and the following dose, but none of the doses after that; I didn't notice any diuretic action on this particular assistant of mine — that is, there was no increase of urine during the caffeine period.
Q. The fact is — we will get up to that laboratory experiment directly — but in fact you did not sleep with these laboratory men all the time, did you, these fellows that were supposed to take a certain amount in the daytime and when not supposed to —
A. No, sir; I didn't sleep with them.
Q. You can't tell what they took after they were away from you?
A. I can only say that I saw him take two doses of caffeine; that is, four-grain capsules, I didn't see him take the two-grain capsule which was taken after dinner at night.
Q. And that is all you know about it, you separated company from them and you do not know what they did?
A. I did that, but I have absolute confidence in him.
Q. I am not talking about that.
A. He is a good reliable fellow.

Q. I am talking about what you know personally.

A. Yes, sir; that is right, I don't know of all he did after I left him.

Q. You don't know what they took?

A. No, sir; only what he told me.

Q. You don't know what he took, only what he told you?

A. Only what he told me, but from my analyses of the urine, I know he took caffeine; it shows that.

Q. And the other man, so far as you know, might not have taken any xanthine-producing substances because you did not know what he took?

A. I do not know what other man you refer to.

Q. I thought you said you had two men.

A. Only one man.

Q. You didn't have a control along with him at all?

A. Yes, sir; I had a control in this way, — that is, the diet was under absolute control for the first three days and the urine for 24 hours was collected after each and every day during the control period. Then, after he was put on larger doses of caffeine and the urine was collected in the same way and compared with what the urine finding showed us in the control period.

Q. I thought you said you didn't know what he did during this period.

A. I am not sure as to that, only what he told me. I have absolute confidence in this young man; I could not tell only from what he told me. I could not put him under lock and key day and night.

Q. What was the urinary test made and what was the reaction in that case?

A. Well, the uric acid was determined.

Q. Yes; how much was found?

A. In this particular case?

Q. Yes.

A. On the first day, the total uric acid in the urine collected was .528 grams, volume of urine on that day was 1390 cubic centimeters; on Saturday, the next day, the amount of uric acid found was .392 grams and the volume of urine was 1860 cubic centimeters. Now, there were about 500 cubic centimeters more than on the previous day. On Sunday, which was also a control day, the volume of urine was 315 cubic centimeters and the total uric acid found was .466.

Then Monday, which contained an additional amount of caffeine of about 10 grams, the uric acid .517, and the total amount of urine eliminated was 375 cubic centimeters.

On Tuesday the total amount of urine passed was 1510

cubic centimeters, and the uric acid .4183.

On Wednesday, the last day, which was also caffeine day, the uric acid .55, and the total amount of urine passed was 950 cubic centimeters.

Q. During what period was this voiding you refer to, with reference to the day?

A. All the urine after breakfast until noon, until the next day before breakfast, all that was voided during that period was collected and saved.

Q. And for that statement you have the word only of the subject?

A. And the urine which he brought down.

Q. Well, that is what I say; he brought down certain samples and you took his word for it?

A. Yes, sir; specimens. I can't swear they were his specimens, he said they were.

Q. Now then, I want to ask you what kind of xanthine or xanthine bodies you found in these specimens that were brought to you and then your method for ascertaining it.

A. Well, I estimated the total xanthine by two methods. One method showed about 300 per cent. more in total xanthine than the other. I think we have a little something to learn about methods on xanthine determination. I think we all have something to learn on that, I have made a little discovery that I will have to give up at this time, but I hope to have published later on. I find that the ammoniacal silver nitrate method as far as given in my work precipitated all of the xanthine bodies with the exception of caffeine; it precipitated theobromine and theophyllin and paraxanthine and the simple xanthines since as xanthine, adonin, guanin, and so on. I find that the copper sulphate and sodium bi-sulphate method does not precipitate theobromine, and as far as I have been able to read, does not precipitate paraxanthine, but it does precipitate theophyllin.

Now, knowing that the copper sulphate and the silver bisodium method does not precipitate theophyllin, the increase in xanthine bodies found in the urine by the ammoniacal silver nitrate method was not due to theophyllin, was it?

Q. Well, I am not an expert; I am trying to learn from you.

A. But it must have been due from theobromine and paraxanthine or either one separate or combined; I have not gone any further than that.

Q. What was this first method? Give it in detail, from a chemical or analytical standpoint, that you conducted. Are you prepared to do that without referring to any notes

on the subject?

A. No, sir; I have to have the notes. I can give you offhand the method — but I will have to refer to my notes for details.

Q. If you were given a specimen, such as that subject of yours, which was brought to your office and you were asked to determine the analysis of it to ascertain as to the xanthine bodies, — you can't give us the method by which you would do that without referring to prepared notes beforehand on the subject?

A. I can give it to you offhand.

Q. Well, that is all I ask for; without referring to your notes tell us in detail what you did.

A. In detail what I did, without referring to my notes?

Q. I think that is what I asked you.

A. I think I want to refer to my notes if you want it in detail.

The Court: The witness is informed that he is permitted to refer to notes for the purpose of refreshing his recollection; you cannot read from your notes.

Mr. Miller: My point is this: If a man is a competent analyst, and I am not attempting to say the witness, Doctor Wesener, is not, but I submit if a man is a competent analyst he can take a specimen of urine and if he is prepared to determine the contents of the specimen, he could not tell what he found in quantity, but he could tell the method adopted without referring to any notes.

The Court: This witness states that he cannot without reading his notes to refresh his recollection and he may read them to refresh his recollection.

Mr. Miller: Very well; I respectfully note an exception.

The Court: The exception may be noted.

BY MR. MILLER:

Q. Proceed to tell us in detail the method you adopted and which of the two methods for determining the presence of or the absence of xanthine bodies.

A. A certain quantity of urine was taken, and the total uric acid established by what is known as Hopkins' method. Do you want the Hopkins' method?

Q. No. Our chemists know what that method is.

A. Yes, sir; it is given in all textbooks.

Q. We have a man who knows what that is.

A. All I can say is that the details were followed as given in Hopkins' method; that is, a certain sample of urine was taken and saturated with ammonia chloride salt which precipitates the uric acid as ammonia urine. This was filtered out and washed with a solution of ammonia

chloride. The uric acid found in this was titrated with a solution of potassium parmanganate.

Q. Do you know what that is?

A. Yes. K. N. M. 4 end 20 solution. The uric acid was titrated with this end 20 permanganate solution, and from that the amount of uric acid determine. The uric acid found under these circumstances was reduced to the amount of nitrogen and the nitrogen factor was determined in this way: A chemically pure sample of uric acid was taken and made up to a certain strength and this was titrated with permanganate solution.

Q. How did you get that chemically pure solution you are talking about?

A. How?

The Court: The witness wants to finish his answer, and he may do so.

The Witness: Then the chemically pure uric acid was taken and a definite quantity weighed out and made up to a certain volume in water. That was also titrated with a permanganate solution and then another weighed quantity of this uric acid was taken and burned with sulphuric acid and nitrogen determined on, and in that way you get a very pure crystal of the uric acid — by the Kjeldahl method for nitrogen.

This potassium permanganate solution was stanardized against the nitrogen factor obtained by the Kjeldahl method.

Then for the xanthine basis a measured quantity of the urine was taken and to this was added magnesia mixture to precipitate the phosphates and possibly some other salts. It was filtered and the filtrate was treated with a solution of an ammoniacal filtrate; that is, containing silver nitrate and ammonia. This ammoniacal silver nitrate solution precipitates the uric acid to the xanthine basis. The precipitation of the uric acid and the xanthine basis was filtered out and washed with weak ammoniacal solution, the precipitate was then dried. So as to drive off all ammonia and the nitrogen combined to the silver nitrate was run as such, and from that nitrogen, the total nitrogen — the nitrogen for the uric acid was deducted — the difference in that nitrogen was deducted to the xanthine basis as the xanthine basis.

Q. Is that all you did?

A. Yes, sir; I think that is enough.

Mr. Sizer: I would like to have the record show that the witness answered that question and gave his method of analysis without referring to his notes.

The Court: It may appear in the stenographic notes.

BY MR. MILLER:

Q. Now then, Doctor, that being all you did, what was the method you adopted to determine whether or not the caffeine was present?

A. Well, the urine was shaken out with chloroform, several times with chloroform, and the chloroform was evaporated and the residue tested for caffeine and no caffeine was present.

Q. Did you state that a moment ago when I was asking you to give in detail what your experiments were, didn't you omit that very thing?

A. I thought you were referring to my test of urine with reference to what had become of the caffeine.

Q. Well, didn't I understand that you were assuming to state in detail the method you adopted?

A. I thought it was with reference to what had become of the caffeine, how to determine the uric acid and how to determine the purin basis.

Q. So that you have only given me a part of the method you adopted. Now, tell us the remainder of that method.

A. For what?

Q. To ascertain whether or not caffeine was present.

A. I found no caffeine in the urine, and that is a very simple analysis, all you have to do is to shake it out with chloroform and if the caffeine is present chloroform will take it out and by evaporating the chloroform you can examine the residue and see if there are any crystals there, and if they are there, subject them to the meuraxic test, and if it shows that test you can go on further and see if that is due to the xanthine dimethyl or something else, paraxanthine, and you have to precipitate these out and remove them and shake up with chloroform and evaporate that again and the residue in that case, if it gives the meuraxic test, is caffeine.

Q. With this chloroform test you don't get any crystals at all?

A. No, I don't remember that I got any crystals from the urine, but I think I did from the liver—of caffeine, from the liver of one of these rabbits.

Q. How was that?

A. I found some crystals in the chloroform extract from the liver of one of these animals, but not from the urine.

Q. Well, we will talk about that directly,—come to the liver. In the urine you say you did or did not, or that you have no recollection on that subject?

A. I don't think I obtained any crystals from the urine, chloroform extraction, as I remember it.

Q. Now, do all forms or methods go into dissolution when you put them through this chloroform test, these methylxanthines?

Mr. Sizer: I did not get that question.

Mr. Miller: I have asked if all forms of these methylxanthines, into which the xanthines were broken up, will go into dissolution, when you put them through that chloroform test.

The Witness: Yes, it would seem so.

BY MR. MILLER:

Q. So that if caffeine be introduced, and it is a composition of theobromine and theaophyllin and paraxanthine, all broken up in the test, all these substances go into dissolution through the process into which you put it?

A. That is by treating with chloroform?

Q. Yes.

A. I do not think you have stated your question very clearly; I think I know what you mean but I would prefer to have you state it a little better than that.

Q. I will ask you whether or not if there had been present in the urine, that specimen which was brought to you, theobromine, theophyllin, paraxanthine, — if those substances would not have been dissolved by the chloroform process which you gave and go into dissolution.

A. I would have thought so, yes; I would have thought so, yes. Although they are not as soluble as caffeine by any means.

Q. Is it or not true that what are known as monomethylxanthines would also go in dissolution?

A. I don't know whether they would with chloroform or not — I am not familiar with that.

Q. What was that you said about having found adenin in some of those specimens of urine?

A. I didn't say I found adenin.

Q. Did you say adenin was one of the xanthine bodies?

A. I said it was one of the bodies precipitated by the ammoniacal silver nitrate.

Q. Did you or not state, or do you now state it is one of the xanthine bodies?

A. Adenin is recognized as belonging to xanthine bodies.

Q. And highly poisonous, is it not?

A. So I understand. I would not say highly, but it is considered a poison.

Q. Now, what portion of the urine was taken in making these two tests you refer to?

A. Can I refer to my notes on that?

Q. Certainly, Doctor.

A. 100 cubic centimeters was taken for the uric acid and 100 cubic centimeters for the total xanthine basis.

Q. Now, how long after you received these specimens of urine, before you began the test?

A. Why, that same day. That morning when the sample was brought down the examination began.

Q. And you immediately conducted these tests personally?

A. I took charge of these tests; I had some assistance from my associates there, Mr. George L. Teller.

Q. What part did he do?

A. I won't say that I always measured the quantity of urine or I was always present, but I was present when most of this was going on, and we worked together on it. We have some persons in the laboratory that run nothing but nitrogen and I would rather take their figures than my own on nitrogen, because they do it more accurately.

Q. And, so far as the determination for nitrogen — that was done by the assistants in the laboratory?

A. Yes, sir; under my direction.

Q. Now, you referred to a certain produce as an end product; what do you mean by end product?

A. Speaking with reference to a produce that passes out of the body as an end product?

Q. I am speaking of it in the same sense that you spoke of it; I wish you to define it and tell me what it is.

A. Well, an end product, as I used it in the physicological or physiological chemical sense, would be urea, which is the end product of nitrogen — nitrogen metabolism. If you take an egg, albumen — eat it, one of the end products of that albumen is urea, and that is called an end product for that reason.

Q. And by "end product" you mean something that is being prepared or in process of being discharged from the body?

A. Yes, sir; in the same sense and relationship that ash is taken out of a furnace, the end product of coal.

Q. Of coal?

A. Yes, sir; I used it in that sense.

Q. Now, when you referred to adenin in the connection you did, did you mean to refer to xanthine also — is adenin a xanthine?

A. Adenin is spoken of sometimes as belonging to the xanthine group. It all depends on what group you take. The purin, nuclein and xanthine bases are spoken of almost synthetically.

Q. What is the difference between adenin and xanthine,

if any?

A. Well —

Q. (Interrupting) Chemically speaking, of course.

A. Xanthine is $C^5H^4 — {}^4O^2$ and adenin is $C^5H^5N^5$; it is the NH^2 group in oxygen.

Q. Must not the body contain oxygen in order to be classed as a xanthine body?

A. When you want to limit it strictly to the term xanthine, it would have to be — but the way it is used it would include adenin, guanin and other elements.

Q. Do you say adenin does contain oxygen or not?

A. It does not; it is a purin basis, and what is xanthine — I think that is a proper name, — the only reason I have been using the purin basis is because, while I have been on the witness stand — is because I thought the jury was familiar with xanthine —

Q. Well, if the jury is not any more familiar than I am they are not very familiar with xanthine. I am trying to find out the difference between xanthine as such and adenin as such, and whether or not it consists in the fact that one of them contains oxygen and the other does not.

A. Am I to answer that?

Q. Well, I asked you if that is the difference, and ask you to answer.

A. Xanthine contains two atoms of oxyger., and adenin contains no oxygen but contains amino — NH^2 group.

Q. Well, you are getting me up to the amino group; I am going to stop. Are you prepared to state that caffeine is reduced to xanthine, and if so, from your personal observation tell us how.

A. Well, I don't know just how it is done in the body, but I know it is done and my experiments show that caffeine is changed into less methylated bodies. I can't say how much of the caffeine is changed into xanthine itself, and how much is changed into certain demethylated xanthines, for I don't know, I didn't go into it that extensively, and I think such work would be open to question because our methods are not very good on those points.

Q. Now, Doctor, did you isolate or attempt to isolate a single one of the xanthine bodies in these experiments of yours?

A. No, I took them as a whole, as they were precipitated by ammoniacal silver nitrate and by copper sulphate methods.

Q. This method as you described is easy of illustration by use of the term "ashes" after the wood is burned, is the product that is thrown off, that which sustains life by taking food and building up cells in the body or repairing

these, which are being decomposed?

A. Why, I stated urea is one of the end products of nitrogen metabolism, and so in that sense, as ash, in that sense a part of that albumen food I have taken in, and of course that albumen replaces a certain amount of waste and tear and wear that has taken place in our bodies and replaces that which goes out as ash, and which is of no value.

Q. Well, strictly speaking, you mean that a certain proportion of that food replaces that wear and tear, you are not prepared to say that is all it does?

A. Well, that replaces a certain kind of wear and tear.

Q. Well, for instance, now assuming that xanthines are taken into the body —

A. Yes, sir.

Q. I want to know what they do when they get in there.

A. Well, it is pretty hard to say, but the best explanation that I can give of that is this — xanthine is probably burned up into urea which is one of the end products of nitrogen metabolism. It may also be excreted to a certain extent in the uric acid, but I do not believe uric acid is increased by caffeine beverages, or it may be synthesized into the other points in the body — that is possible.

Q. The fact is you don't know what becomes of it?

A. I don't think anybody does.

Q. I am trying to ascertain from you what you know.

A. That is all I know, — is what I have told you. I can't tell you any more.

Q. And that means it may do two or three things and you don't know which it does?

A. I know from my reading that xanthine acts as a stimulant and it is probably one of the natural stimulants in the body through the human economy, and I know that it is highly probable that part of it is oxydized to urea, that some of it may be changed into uric acid and it is also possible that it might be synthesized in the cell into a nuclein body.

Q. Xanthine is the base of uric acid?

A. Is a base of uric acid?

Q. Yes.

A. Well, uric acid belongs to the same group and is of that type. Xanthine is a base and it is brought into contact with something else and forms uric acid. Uric acid only differs from xanthine in that it has one more atom of oxygen.

Q. When you put the xanthine with the one more atom of oxygen, you get uric acid?

A. You are right.

Q. That being right, does it logically follow the more xanthine you take, the more uric acid result?

A. If it were true that it were all oxydized into uric acid, but it is not true. I did not find any increase of uric acid in my test.

Q. I thought you said you did not know what became of it when it went into the body, except that it might be one of two or three things, and this conversion into uric acid was one of them?

A. I said I did not find any increase, and those figures will bear me out when you estimate the percentage of uric acid found, and I think most of the authorities are agreed on that fact that the purin basis — I won't say the purin basis — but that the caffeine does not increase the uric acid.

Q. At any rate, the result of having caffeine is to produce more xanthine?

A. Xanthine compounds or bases — yes.

Q. In using the term "hydrolosis" yesterday, what did you mean by that term?

A. That is a term often used in chemistry.

Q. But you used it yesterday, what does it mean?

A. It means a substance that will take up water and then break down into smaller molecules.

Q. And this process of hydrolosis, what is formed in that?

A. That depends somewhat on the substance or material you are working with. For example, if you take cane sugar and add a molecule of water, the hydrolosis would take place and you would get the two levulose and dextrose.

Q. You use this term hydrolosis in connection with caffeine and stated that hydrolosis took place. Now, of course, I am trying to follow counsel for the claimant, and I ask you in what respect you use it as respects caffeine?

A. The sum of the methyl group was split off of the caffeine, a sort of cleavage process, sometimes spoken of as hydrolosis.

Q. What does it form when it is split off by hydrolosis?

A. I do not know what becomes of the methyl group unless it is burned up and goes out as carbon dioxide, the gas you throw off from your lungs in breathing.

Q. Would not that form methyl alcohol?

A. Chemically in the laboratory that could be done, but not necessarily, no. It forms formic acid, but most commonly it would be carbonic acid.

Q. At any rate, under this description of yours that you have given, you say it might be done, but would it not

necessarily be done, this formation of methyl alcohol?

A. I don't believe any methyl alcohol would be produced in the body. I am quite certain as to that.

Q. If it would be, it would be wood alcohol?

A. If it would be, we would all go blind, because wood alcohol tends to blindness.

Q. Is methyl alcohol wood alcohol?

A. Yes, sir; I agree with that.

Q. Now, referring back to the diuretic effect of caffeine, I will ask you if the work of Professor Cushny is not a standard recognized authority?

A. Yes, sir; I consider it such.

Q. And I will ask you if Cushny does not lay down that caffeine acts as a diuretic?

A. He does. But what else does he say, read the rest.

Q. I will let you read it if you want to: "Caffeine is excreted in the urine to a very small extent as such—"

A. (Interrupting) When you give large doses of it, yes, but not otherwise.

Q. The doses you gave, you didn't find any?

A. No, sir; they were not large enough, and I gave very nearly fourteen grains to the dose.

Q. (Reading): "During the passage through the body, it loses its methyl group."

A. I agree with that.

Q. "First becoming dimethyl and then monomethyl or xanthine." Do you agree with that?

A. I do not carry myself that far, but I presume that is right.

Q. "Eventually xanthine is formed."

A. I believe that is so.

Q. "And this probably breaks up into urea."

A. I think that is right, the way I look at it.

Q. "In the urine are found some quantities of the unchanged drug, accompanied by larger quantities of dimethyl xanthine and monomethyl xanthine."

A. The unchanged drug would be present in the urine if you gave large doses of caffeine, otherwise not.

Q. You do agree that Professor Cushny does not in that connection refer to large doses?

A. He does not refer to large doses, but I think Professor Cushny is simply quoting an article written by some experimenter on that subject. That is not Professor Cushny's work, but his opinion from this experimental work of someone who made the experiment. That is evident. He did not make the experiment.

Q. How do you know?

A. I am certain he didn't make it.

Q. How are you certain?

A. For this reason, it is not a pharmacological study, it is a study of a physiological chemist, and Professor Cushny is not a physiological chemist.

Q. For that reason you state you know he did not do that work himself?

A. That would be my opinion, for I know Professor Cushny would not undertake to do work of that kind unless it was in his particular branch.

Q. Does not any pharmacologist, in order to understand pharmacology, have to be to an extent a physiological chemist?

A. He would have to know a great deal about the subject — that is true — but he tries to keep out of the domain of pure physiological chemistry.

Q. To be accepted as an authority, as Professor Cushny is, does not he have to be what is termed a physiological chemist?

A. He would have to in so far as he would want to know the action of drugs on the human system, but I don't think you could get Professor Cushny to qualify as a physiological chemist. I may be mistaken, but that is my opinion from reading his excellent work.

Q. Now, in this administration of caffeine, what would be the effect if a grain of caffeine were taken in each ounce of our food and each ounce of our drinks in the day?

A. How many ounces would you take of food and how many ounces of drink?

Q. You know the diet of an average man, just about a grain in each ounce that he takes?

A. Of course, that would depend on the individual.

The Court: Give the standard, Mr. Miller.

BY MR. MILLER:

Q. Then take the average man.

The Court: Assume your basis, how many ounces, so as to save time.

BY MR. MILLER:

Q. Are you prepared to give the diet of an average normal man?

A. I would have to figure it out.

The Court: Just assume it in your question.

BY MR. MILLER:

Q. Well, assume fifty ounces, and I think that is not very far from right, — that would be fifty grains.

A. A man should not take more than three ounces of fat and not more than ounces of meat and not more than

three-quarters of a pound of starchy food—you are awfully high on that fifty ounces. That would be twelve ounces of caffeine three for the food would be fifteen and four for the meat would be nineteen — I don't know of any man eating fifty ounces a day.

Q. And the coffee and tea?

A. That is liquid. I am talking of actual food.

Q. I want to get the drink as well. He would take nineteen of food, that would be nineteen ounces of caffeine in the food?

A. I am talking only about food, not water. I do not consider that food.

Q. Now, add to that the coffee and tea.

A. How many ounces of that?

Q. You drink three cups of coffee. They are about five ounces each and that would be fifteen ounces.

A. Now you want me to add a grain for each ounce of coffee?

Q. Yes.

A. Nineteen for food and one grain for each of fifteen ounces of coffee, that would be thirty-four grains with the coffee.

Q. Now, to that add the glasses of water that a man drinks a day, he would probably drink four or five glasses of water.

A. Three or four.

Q. That would be about five ounces each, and add fifteen grains for that.

A. That would bring it up to —

Q. About fifty ounces.

A. Yes, sir, estimate about fifty ounces.

Q. What would be the effect of taking that much caffeine daily, a grain to the ounce?

A. I don't know what the effect would be of taking that much daily, but I have stated from what I have acquired from the literature that forty-five grains have been taken daily without producing serious effects.

Q. That was in the case of what?

A. That is recorded in Gademer's text book on toxicology.

Q. That is the man who wrote the work on the Divine Tree?

A. No, sir; that was Doctor Mortimer who wrote the "Divine Plant."

Q. Will you give the reference to Gademer?

A. Gademer's work on Toxicology.

Q. That forty-five grains may be consumed daily without harm?

A. He said those amounts have been taken daily without producing noticeable results.

Q. Is he the only authority you can cite on that point?

A. I think there are some others. I have seen them but I cannot recall now, but I am not exactly certain about the reference and that is the reason I don't want to give them, but I can furnish them.

Q. Would you add caffeine to milk?

A. To what extent?

Q. To the extent of one or one and a quarter grains?

A. I might under certain conditions. If I were in charge of the commissary department of an army and could not get any coffee and tea and could get milk, I would put caffeine in the milk.

Q. That is, where you would expect to get a vigorous prompt response?

A. Yes, sir; that is what we are after always in this world.

Q. That, however, would not be true, would it, in the case of an ordinary female or child or person under twelve or fifteen years of age?

A. I see no reason why a child ten or eleven years or twelve years of age cannot have a certain amount of caffeine beverage, and the same way with a woman.

Q. And you would give milk along with the caffeine?

A. If you could not get coffee or tea and you wanted a stimulant.

Q. How much do you give to your children daily?

A. I have not any child, I am sorry to say.

Q. Referring to your definition of metabolism, you state that metabolism goes into the mechanical changes brought about —

A. Chemical.

Q. I probably misquoted you. What are those chemical changes which you cover in that general definition of metabolism, what particular chemical changes?

A. That is a great, big, long subject. I can only go into it to a certain extent. It refers to the ingo and outgo and what takes place with the ingo, what becomes of it, how it is changed into the material that goes out, what is built up, what is assimilated, how the changes take place here and there. That is all metabolism.

Q. Under your definition of a poison, is strychnine or arsenic either a poison?

A. In the generally accepted sense, they are, but in the strictly scientific sense, I do not know of any substance that is inherently a poison. That is, you can always take it to an extent that it won't have any effect at all.

Q. You have been testifying from the scientific standpoint with respect to poisons?

A. From the strictly scientific standpoint and also from the popular standpoint, that a poison is usually understood to be any substance which given in relatively small doses, acts injuriously or causes death.

Q. As to the reported cases of serious or permanent consequences following from the use of caffeine in any quantity, I ask you if the Massachusetts Medical Society is or is not a reputable organization and if its journal and minutes are not those of a reputable organization?

A. They are, as far as I know.

Q. They are published and distributed and frequently read by the medical profession?

A. I presume they are, although I have never had access to them or seen any of them.

Q. Now, I ask you to refer to the Massachusetts Medical Association minutes under date of 1887 to 1889, volume 14, and state if you do not find there as many as 163 cases of tea poisoning alone, and also a reference to about 50 others about which no comment is made, making a total of 213 cases of impairment as a result of tea drinking alone?

A. The title of the article is "Relation of Tea Drinking to Disorders of the Nervous System." You get into complications right here. You don't know whether it is caffeine or the other substances like adenin or theophyllin, or especially the tannic acid in the tea which is injurious. I will read this if you give me a moment.

Q. You can tell whether the author ascribes it to theine or tannic acid very readily?

A. He speaks here of chronic tea drinkers and acute tea poisoning.

Q. Note the marked passages as you go along and just answer me.

A. I cannot read all this unless I have at least half an hour.

The Court: You can do that at recess.

Mr. Miller: I am quite willing for him to examine them and there are some others that I will refer him to and hand them to him and let another witness be called.

The Court: Are they all with reference to caffeine?

Mr. Miller: They are caffeine in coffee or tea, one or the other, and one of them is caffeine in Coca Cola, and I should be glad to pass them all to the Doctor without now specifying; just have him look at them.

Mr. Sizer: Will you give the references now?

Mr. Miller: I am going to give the books.

Mr. Sizer: Give us the books and the references.

Mr. Miller: The Boston Medical and Surgical Journal, 1909.

Mr. Sizer: What page and whose articles.

Mr. Miller: Page 608, the article is by Doctor Wesseldorf, of Cambridge.

The one on Coca Cola poisoning is Dr. Keystone, and appears in the Virginia Medical Society Journal, March, 1903, page 154.

Here is one of the Medical Record by Leszinsky in 1901, page 42.

The Witness: Is that an original article?

Mr. Miller: It appears in the Medical Record.

The Witness: That don't tell whether it is original or not.

Mr. Miller: I will let you examine it and see for yourself.

Another is in the Medical News, page 486, by Doctor Wood, published December, 1904.

Another is the Boston Medical and Surgical Journal, 1886, page 314, on Chronic Tea Poisoning.

Another is by Doctor Lemaire, or at least, the article is by him in the French Journal of Medicine, 1909, page 293.

The Witness: Is that in French?

Mr. Miller: Yes.

The Witness: I cannot read French. I can read German, but I will try to have it translated.

Mr. Miller: You could not verify the translation, and we will withdraw that.

The Court: On what point, I want to know, do you offer these?

Mr. Miller: All of these deal with caffeine.

The Court: But on what theory are they competent with reference to what statement on direct examination?

Mr. Miller: This witness stated yesterday, he was asked this question: "I will ask you if there is any reported case of serious or permanent consequences following from the use of caffeine in any quantity?" and his answer was "I have never read of such a case. I know of one case reported where the individual took by mistake so many grains, and so forth —"

Now, what I propose to do, is not to go into details, but to show that these are reputable publications, as I have already shown to one of them, and my object is to show that his course of reading has not been very extensive or he would have seen something of these numerous authorities.

The Court: Was that question asked by the other side?

Mr. Miller: Yes.

The Court: I will rule on that when the matter is presented, I just wanted to get the facts now.

Mr. Miller: The question asked him was:

"Q. I will ask you if there is any reported case of serious or permanent consequences following from the use of caffeine in any quantity."

The Witness: Are those cases all on tea and coffee, or are they on caffeine?

BY MR. MILLER:

Q. I am going to ask you to look at them and state for yourself, and I shall give you ample opportunity to do it. How do you know, if you do know, that xanthine is found in the cell — that xanthine as such is found in the cell?

A. That xanthine, as such, is in the nuclein structure, I have read in the literature.

Q. That is the only way you know it?

A. Yes, sir; the only way I know it.

Q. Will you kindly give us a reference to any reputable author who so states that xanthine as such, that is, xanthine free which can be isolated, is found in the cell?

A. I shall try to look that up. I am sure I have read it.

Q. It is found in the muscular tissues?

A. Yes, sir; it is.

Q. Do you know that by personal experimentation?

A. I know that the purin bases in the body are very much higher in the muscles than in the liver.

Q. What is the difference between the muscular tissues and the cells, don't the cells form a part of the muscles?

A. Of course, the muscular structure is made up of cells, but they are more fibrous, and the nucleus of those cells is much smaller than the cell in the glanular tissues in which case the glands are made up almost wholly of cells.

Q. In which instance was it that you stated that xanthine was sometimes found in trances in the cell?

A. Read the question.

(The question was read to the witness.)

A. I refer to the glandular organs?

Q. What?

A. The sweetbreads, the spleen, the thyroid, the superrenal capsule.

Q. What is the difference physiologically between theobromine and caffeine, if you are prepared to say from your personal experience and observation?

A. I could not say from my personal experience.

Q. Is xanthine, as such, that is in its xanthine form, taken into the body?

A. You mean as it may be found in the food?

Q. I don't speak of its combination, but is xanthine

itself used as a food?

A. No. It may be taken into the body with food, as it exists in some of our foods.

Q. When you answer that xanthine, so far as you know, was a natural stimulant of the human body, or rather that the purin bases were, did you speak from your personal experience or from your reading?

A. From my personal experience, from my experiments and from my reading. I make that deduction.

Q. You have related the extent of your personal experience and the extent of your animal experimentation to the jury, and the remainder of the basis for that answer is made up from your study?

A. Yes, sir; I would say it in this way. I have been drinking tea and coffee ever since I can remember. I started when I was five or six years old, from the experiments I have made on animals and also on the human subjects and from my reading, I read that xanthine is a powerful muscular stimulant and that caffeine is a trimethylxanthine and that is a muscular stimulant, and from that I deduced that xanthine can and must be a natural stimulant to the body.

Q. You state that half a grain of strychnine has caused death?

A. Yes, sir.

Q. What effect would one-tenth or one-sixteenth of a grain have?

The Court: It is not necessary to go into that.

Mr. Miller: That was brought out by way of illustration.

The Court: It is so obvious that strychnine in a certain dose will kill and that it can be reduced so that it won't kill that we shall not go into that.

Mr. Miller: It was an illustration brought out in the examination in chief?

The Court: Yes, and it has been gone into far enough.

Mr. Miller: Then, I move to exclude that if I am not permitted to cross-examine about it.

The Court: The motion is overruled with an exception.

BY MR. MILLER:

Q. What is the difference between theophyllin and theocin?

A. Theophyllin is a trimethylxanthine which exists naturally in the tea. Theocin is a theophyllin made by man, it is a synthetic process. They are chemically identical.

Q. Do you know of any difference in the physiological

action?

A. I do not know that there is any difference in those two products physiologically.

Q. Then, referring to this Allard case, was not that a case of theocin poisoning?

A. It was a case of theocin poisoning so reported.

Q. There were two of those cases reported by Allard in that article?

A. Yes, sir.

Q. Both due to theocin?

A. Yes, sir.

Q. How does the taking of caffeine produce energy?

A. By increasing the muscular action, stimulating the muscles, stimulating certain centers which bring about more activity of certain organs.

Q. Making the muscle act more freely?

A. Yes, sir.

Q. That is what you mean by the creation of energy?

A. Yes, sir; and of course, if the molecule is burned up into urea to a certain extent you would get energy from that, but in a lesser degree, of course.

Q. You, I believe, have appeared against this Pure Food and Drugs Act once as a witness?

Mr. Sizer: We object to that.

The Court: The objection is sustained.

BY MR. MILLER:

Q. The analyses made in your laboratory are paid for at the rate of $2.50 each?

A. $2.50 each?

Mr. Sizer: We object to that.

The Court: The objection is sustained.

Mr. Miller: I asked the witness this question, if he has not stated on former occasions that the analyses in his laboratory were paid for at the rate of $2.50 per analysis.

The Court: I exclude that on the ground that it is entirely immaterial.

BY MR. MILLER:

Q. In those experimentations that you made on rabbits, did you ascertain as to the units of nutrition that were consumed by the rabbit, and if so, how?

A. No, sir; I did not ascertain that, but I gave them all they could eat, I gave them cabbage, carrots, hay, lettuce.

Q. Did you ascertain the nutrition that was excreted?

A. No, sir; I simply made the test on the liver of the carcass of the animal to see whether there was any caffeine found in the urine.

Q. You know there are means of determining whether

or not the weight of an animal is due to the increase of watery substance in his body, or whether it is due to the taking on of physical upbuilding, such as flesh and muscle?

A. Oh, I see what you are after now. Yes, I determined that. I don't think there was more than 75 per cent. of water in the carcass of the animal, which is normal.

Q. Is there any means to determine that?

A. I think so.

Q. And if Doctor Hoyt was the one first to determine that, and if his method has not been followed since — I ask you that?

A. I do not know that he was the first, but I know his method is a very good one.

Q. How did you determine the ingo and the outgo?

A. I gave them all the food they would eat. I was not interested in the amount. I wanted to know what became of the caffeine, whether it had any effect on the structure of the body. The fact that they gained from 10 to 53 per cent. and even to 150 per cent. could not have been due to water, for if the animal gained 100 grains, a 140 per cent. gain, and that was due to water, it would be a liquid walking around.

Q. You could ascertain that by applying a test?

A. I ascertained it was good healthy structure.

Q. What was your test that you applied?

A. The test I applied to the carcass; I weighed it like a butcher does a beef. I weighed the liver, and I know it was good firm meat and good average liver.

Q. Then you simply looked at it and weighed it?

A. That was sufficient for the object I had in view in the experiment.

Q. In looking at an animal in that way and weighing it, how could you determine what percentage of that increase was due to water?

A. By estimating the solid matter and estimating the amount of water.

Q. But you say you don't know how much solid matter the animal had, but you gave him all he wanted to eat?

A. Certainly, gave it all it wanted to eat, and the water I would not consider as a material factor in increasing the weight, it would have to be something besides water.

Q. If as a matter of fact the increase in weight was due to water, then your experiments would not prove whether or not caffeine was a nutrient or not?

A. I never tried to prove in this experiment that caffeine, as to animals, was a nutrient. That was not the object of the experiment.

Q. But I ask you as a scientific man, if it were due to

water, would it prove anything to you as respects the nutrition of caffeine?

A. If it was due to something else, it was not due to caffeine.

Q. Were those young rabbits or not?

A. Three of them were, I would say, young rabbits.

Q. Give the numbers of those three.

A. Nos. 3 and 4 and 6. I would say they were young rabbits because they increased in weight, and No. 5 was a fully matured rabbit, and he was fed caffeine, and therefore did not increase very much in weight, only increased about ten per cent.

RE-DIRECT EXAMINATION.

BY MR. SIZER:

Q. I want to ask you first, about the variations you observed in the percentage of alcohol in the samples of Coca-Cola syrup as analyzed; to what could that variation be attributed?

A. To the process of the manufacture of the Coca-Cola syrup, and in the variability of the amount of alcohol used in making Merchandise No. 5, and further that so little alcohol enters in the Coca-Cola syrup, that even the estimation made by the most careful analyst is more or less a guess as to the amount of alcohol.

Q. Is it true that alcohol is a very volatile substance?

A. It is.

Q. Would that tend to produce variation in the analyses of the two samples?

A. Certainly.

Q. You say you are not a pharmacologist. Is it necessary that one should be a pharmacologist in order to make the experiment and ascertain the result of the conclusions you have testified to in your examination in chief?

A. No, sir.

Mr. Miller: That is reasoning in a circle. That requires no explanation.

The Court: I don't think it requires any explanation. The Court has admitted his testimony.

BY MR. SIZER:

Q. On what do you base the testimony you have given on the percentage of theobromine in chocolate and cocoa, on personal analysis or on literature?

A. In this instance, on the literature. I don't remember my analysis on that.

Q. Look at that diagram which illustrates a tree with the base caffeine and the various branches of other substances. When caffeine is demethylated or transferred

into those other substances, does the caffeine remain on there?

A. No, sir; the caffeine is broken up into the lesser substances. This does not show it exactly. We are not certain that we get these three demethylated substances in the body. We know we get some, but which has not been absolutely shown and then those are broken down further to show the xanthine which the tree don't show, and then what becomes of the xanthine.

Q. That is, caffeine does not reproduce the other substances by a sort of process of degeneration or splits it up into them?

A. Yes, but the caffeine disappears.

Q. That Allard case that you referred to, does the report say what the condition of the patient was before the theocin or caffeine was taken?

A. Very distinctly. They were both suffering from heart disease and chronic Bright's Disease. Their bodies were filled with the fluid and their legs were more or less oedematous, and one, if not both of them was tapped. The theocin had been given to them and then the caffeine and they died, but I don't know whether the theocin killed them or whether they died from the disease.

BY MR. MILLER:

Q. Now, about the alcoholic tests. You undertook to make an alcoholic test in the first instance?

A. Yes, sir.

Q. And you didn't discover any alcohol?

A. In a drink of that kind where you would find .2 of one per cent, I would not consider that any alcohol.

Q. Why did you report alcohol in the next two tests?

A. I got a little more, .48 and .59 of one per cent, but even that is insignificant.

ROBERT L. EMERSON,

the next witness called on behalf of the claimant and the intervenor, the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION.

BY MR. SIZER:

Q. Where do you reside?

A. Boston, Massachusetts.

Q. Give your full name.

A. Robert L. Emerson.

Q. What is you occupation?

A. Chemist.

Q. Where were you educated, and what experience have you had as a chemist?

A. I was educated in the public schools of Cambridge, Massachusetts, and I graduated at Harvard University in 1894. In 1896, I entered Harvard Medical College and graduated in 1900. I spent the following year and three months in Germany studying chemistry, and on my return was appointed a teacher in Physiological Chemistry at the Harvard Medical School where I taught for five years, teaching Physiological chemistry, Medica Chemistry, Toxicology. I left the Harvard Medical School in 1905, and since that I have had a laboratory of my own where I do special research work.

Q. You have the degree of M. D.?

A. Yes, sir.

Q. Have you ever practiced as a doctor?

A. Never.

Q. Your knowledge of the practice of medicine is based simply on your reading?

A. Yes, sir.

Q. From the standpoint of a physiological chemist what is caffeine—in a chemical sense?

A. In a chemical sense, it is a trimethyl dioxide purin.

Q. What effect does it have when taken into the body?

Mr. Miller: He is not qualified to testify on that.

The Court: He said he had carried on a laboratory as a physiological chemist for five years, and I overrule the exception.

Mr. Miller: He has not qualified as a pharmacologist, and has not attempted to qualify himself.

The Court: The exception is overruled. Without defining as to pharmacology or anything else, I think he is qualified to express an opinion on the question asked.

BY MR. SIZER:

Q. State whether or not your field in which you practice qualifies you to express an opinion on that.

A. Yes, sir.

The Court: I have already ruled that I would not attempt to differentiate as between physiological chemist, pharmacologist, and I hold that this witness's experience qualifies him to give an opinion on the question asked.

(The question was read to the witness).

A. It acts as a stimulant.

Q. Is that effect necessarily injurious to the body?

A. Depending upon the degree of stimulation.

Q. Would the quantity taken have anything to do with that?

A. Yes, sir.

Q. I want to ask you if you have made any experiments tending to show the effect of caffeine when taken into the system, either with animals of with men?

A. Yes.

Q. With either or both?

A. Both.

Q. First, state what experiments you have conducted to ascertain the effects of caffeine on the human system?

A. What point of view?

Q. Any point of view; any experiments you have made on a human being with respect to the use of caffeine.

A. We have made some experiments on the central nervous system and some on the nutrition processes of the body.

Q. Take first the nutrition processes.

A. We have studied the effect of tea and coffee and taking Coca-Cola syrup on the nutrition processes of the body in this way:

Mr. Miller: He says "we."

The Witness: I did it personally.

BY MR. SIZER:

Q. You were speaking editorially when you say "we"?

A. Yes, sir. I put two men, one of them weighing about 180 pounds, 23 years old, and another about 105 pounds, about 15 years old, on a certain specified diet, consisting of milk, cream, eggs, malted milk, salt, sugar, water. This diet contained none of the xanthine bases, no purin, and the urine was collected by the men in my presence and the urine analyzed to see what effect the administration of caffeine and Coca-Cola had upon the system. To determine that properly, the men were fed this diet for five or six days and the urine collected as it was passed up to about half-past seven or eight o'clock each morning before breakfast. The breakfast was prepared in the laboratory and eaten there. I might add that those two men were in my employ as chemists, were under my supervision during that whole time. They prepared their own meals under my supervision three times a day and ate them in the laboratory, except that on one or two occasions they took them home for supper, having previously prepared them in the laboratory, and on one Sunday they took them home. The urine was collected in 24 hours, each 24 hours was collected and saved and analyzed. One man was given nine grains of caffeine with his food, for the next five days. During that time the other man took nine ounces of Coca-Cola syrup, corresponding to nine glasses of Coca-Cola as served

at the fountains, but inasmuch as this diet had to be determined definitely, it was not possible to dilute the syrup down with water, as the syrup served at the fountain was. He was only allowed a certain amount of water in addition to this food, and if he had used it at the soda fountain, he would have had too much water. This was kept up for five days and the caffeine and the Coca-Cola given in addition to milk, eggs, and so forth diet; and then they were continued on the diet, but the caffeine or Coca-Cola was removed from the diet and they continued on that for five days. In that way, we had the first five days that the men were on the diet to serve as normal or control for the urine excreted; the next five days show the urine changes undergone in the metabolism or nutritive process in the body, so far as determined by the urine.

The following five days were compared with the first period of five days to show if there had been any disturbance or whether they returned to their normal condition.

The Court: Now, during the second five day period one of them had caffeine in addition and the other had Coca Cola?

The Witness: Yes, sir, and when I say Coca Cola I mean Coca Cola syrup because they were limited as to the amount of water they should take. After the fifteen days, the men were reversed, that is, the man who had previously had caffeine was given Coca Cola, and the man who had previously had Coca Cola was given the caffeine, and that was continued for five days. In the case of the man who had been taking Coca Cola — the case of the man who had taken caffeine was continued six days on account of an accident, one sample was lost, only a small amount left and I wanted to have the thing go through, and then the following days for the Coca Cola man was subsequently a normal period and the following three days was subsequently a normal period for the caffeine man. In that way, they were on the diet 22 days, consisting of milk, cream, eggs, salt, water, sugar.

BY MR. SIZER:

Q. Did you state the quantity of caffeine and Coca Cola that was given?

A. I intended to. The amount of caffeine that was given was six-tenths of a gram approximately nine grains. I will try to give them by the English system hereafter.

Q. Each day?

A. Nine grains each day; and I may add that the first day, through a misunderstanding in the laboratory, the caffeine had been weighed out for the amount and the Coca Cola syrup, and they did not take them in divided doses.

They didn't take them one-third in the forenoon and one-third in the early afternoon and one-third late in the afternoon, but took the whole thing in one dose, the caffeine man took nine grains of caffeine put it on his tongue from the paper and washed it down with a little water; the Coca Cola man took seven ounces of the syrup, followed in five minutes with the remaining two ounces, or six and a half the first time followed by two and a half, he got the whole inside of five minutes, and that was the smaller and the younger man, and the man who took the caffeine went home and went to bed and couldn't sleep, turned up at the office the next morning a little late and I asked him what the trouble was and he said he didn't get to sleep until four o'clock.

Q. Was that a big dose?

A. Yes, sir; the man who took the Coca Cola in the five minutes was a younger boy and he weighed less, and he said that he got to sleep all right about eleven o'clock.

Mr. Miller: I object to that statement of the young man, it is ex parte and not competent.

The Court: The objection is sustained.

The Witness: The 24 hours of urine was carefully saved and analyzed in the laboratory, partly by myself and partly under my own supervision by the men who passed it.

The Court: I understand after the first day, the caffeine and Coca Cola were administered in three doses.

The Witness: I think they took it in three doses.

BY MR. SIZER:

Q. Was that at different times from their regular meals?

A. I think they took the morning dose practically immediately after breakfast.

The Court: Were they eating their other food and diet three times a day?

The Witness: Yes, sir; three times a day. They would get it into their body as food within the 24 hours.

BY MR. SIZER:

Q. And they took the caffeine and Coca-Cola in three doses after the first day?

A. After the first day, they took it as a rule, in three different doses.

Q. How long did it follow the meal?

A. I think that they took it soon after breakfast, the first dose.

The Court: When was the second and third dose?

The Witness: They took the second dose soon after

lunch and the other in the middle of the afternoon.

BY MR. SIZER:

Q. When was the lunch.
A. Soon after twelve, twelve to one.
Q. Well, what do you mean by soon after?
A. Oh, about two o'clock.
Q. And the other?
A. About four or five o'clock.

(The Court here took a recess for twenty minutes.)

AFTER RECESS

The Court met pursuant to recess at 12.20 p. m.

CLAIMANT'S EVIDENCE CONTINUED

R. L. EMERSON,

resumed the stand for further examination.

EXAMINATION CONTINUED,

BY MR. SIZER:

Q. Doctor, you stated that the man who took this caffeine and took the whole nine grains in one dose on the first day reported the next morning that his sleep had been impaired?

A. Yes, sir, he was late showing up and I asked him what was the trouble. After that when he took caffeine I found out or he reported no such condition —

Mr. Miller: I object to what he reported.

Mr. Sizer: Then I object to the other statement as to what was told him.

The Court: As to what?

Mr. Sizer: As to what he told him that he detailed in the first answer — I object to that what he said.

The Court: The objection is sustained.

Mr. Miller: And the entire matter is stricken out?

The Court: As to what this man reported —

Mr. Miller: Yes, your Honor understands I didn't object —

The Court: You didn't object to one statement but to the other —

Mr. Sizer: Then I ask that the statement of this witness as to what was reported be stricken out.

Mr. Miller: Counsel cannot object to what he draws out from his own witness?

The Court: Well the point I rule on or base the ruling on is that he did not call for it, and the witness volunteered the statement, and therefore he has a right to object to any irresponsive and incompetent matter.

The Court: I wish to put the witness right; the witness was simply giving a statement of the entire matter, probably not appreciating what part of it was hearsay —

The Court: There is no reflection on the witness.

The Witness: His statement to me was in reply to my question at the time.

Mr. Sizer: The court rules that out.

BY MR. SIZER:

Q. Now, doctor, you completed your statement of these experiments, did you?

Mr. Miller: How was that.

BY MR. SIZER:

Q. You got though your statement of experiments?

A. I think that is all so far as the experimental part goes.

Q. The reason I ask you if you are through with the statement is I want you now to state the results and conclusions that you observed or that you adduce from the experiments?

A. Of these urines that were collected, the twenty-four samples from each man — forty-eight specimens of urine— we determined first twenty-four hour quantities of the urine, measured it. We next determined the total nitrogen, all the nitrogen excreted in the urine day by day, that is in each 24 hour amount of urine, I mean daily urine of both from day to day.

The total purin nitrogen, or xanthine nitrogen, as it has been called here in the last week or two, and the uric acid in each case.

We also determined in one series, which includes the second normal or control period of the second amount and following the caffeine period of that amount and the following normal period, that is those three periods were taken out, also taken out for another set of determinations—the urine of the first amount—I think I had better carry one man through, the man taking the caffeine first; the first five days urine showed certain variations in the quantity of the urine passed, but these variations were no greater nor less than the variations shown in a series of experiments performed by the man who got up this diet, and which variation of such results has been established as the normal results resulting from the use of this mixed milk, cream and egg diet, that is, the man who got up this diet originally performed certain experiments on humans or men to determine just what the normal average urine was—the amount of urine passed by these experiments—

the amount of urine did not vary essentially from the normal that had been established for that diet. The following five days period during which he took caffeine did not show any variation from the normal in the quantity of urine passed, nor did the succeeding five days urine show any essential difference. In other words, the man No. 1, subject No. 1, for the first part of his experiment when he took caffeine in five days, two five days anteceding, and the five days following, showed no appreciable effect on the amount of urine passed due to the taking of the caffeine. The same applies to the following two periods and taken in conjunction with the third period of the first half which serves practically as the normal for the second half of the experiment — there is shown no appreciable change from the normal other than was seen in the first normal period; there was a rise in the quantity or urine — the quantity of urine was increased the second or third day when he took his normal diet before he began taking the caffeine, and when he gave up the taking of Coca Cola in the second half of these experiments there was also only seen temporary increase, but as such of no significance so far as the effect of either the caffeine or the Coca Cola —

Mr. Miller: (Interrupting) I object to that, it is a matter purely of argument and conclusion; it is not a part of the experiment at all, when he says it is insignificant as respects certain things —

The Witness: Insignificant in amount, I mean.

The Court: The objection is well taken in so far as the answers are vague, as not showing what the witness regards as appreciable. He may state facts.

Mr. Sizer: I was going to say —

The Court: (Interrupting) The witness will just give the facts, and you can express opinions later.

The Witness: The amount of urine did not vary from the quantities that had been established; the total nitrogen was determined on each sample of urine for the subject No. 1 and that also does not show any variation in the amount from previous standards established for this diet, so that the purin nitrogen was determined by a method known as the Kruger & Wolff method, which is a precipitation of the purin nitrogen, or xanthine nitrogen, as it has been called, by sodium bisulphate and copper sulphate and the nitrogen determined, and that shows an increase on certain days but not on others, but the amount of increase is variable and agrees in a way with the amount of purin nitrogen that was given to the man in his diet when he took caffeine or Coca Cola syrup — the diet itself does not contain any purin nitrogen. The uric acid was determined and this

shows in some instances a slight relative increase, that is from day to day, but the increase is within the limits or within what has been established as the normal quantities, so that it does not vary from those quantities in man. The second subject who during the first half of the experiment took Coca Cola —

The Court: (Interrupting) In order to save time I think it would be well to have this witness just state amount and quantity — his statement is it does not vary appreciable from normal affords very little information for the jury; we do not know what his opinion is as to normal and slight variation—let him give amounts, if he says normal indicates so much, let him state what normal is and how much it varies from it.

BY MR. SIZER:

Q. We will ask you to do that, doctor, or he might file his notes showing —

The Court: Let him give the details and facts —

Mr. Sizer: State as a matter of fact how much the variation was from day to day.

The Court: And the quantities.

The Witness: The amount of urine established for this diet varies from thirty to seventy ounces of urine in twenty four hours. The amount or urine passed by the first subject started at sixty ounces, increased to eighty ounces, diminished to thirty-four ounces and varied between that and thirty-six ounces until the end of that period, that is, those variations are within the normals established.

BY MR. SIZER:

Q. What is the normal range of variation?

A. Between thirty and seventy ounces. The second half of the first man's experiment varied for the first twelve days between thirty-three ounces and forty-three ounces; the following day it went to seventy ounces, and a subsequent date to that, which is the last day returned to forty ounces.

The Court: I do not know what you mean by the second half — you mean period?

A. Yes, sir.

Q. When did you commence?

A. The first three periods are taken as the fore normal and the after normal period of the second period.

Q. When had you begun your experiments?

A. The second period began with the third period, which represents the fore part of the fourth period and runs through to the fifth period, that is, the middle normal

is used as the after normal of the first half, and the fore normal of the second half of the experiment.

Q. I think it would lead to less confusion if you would describe them as the first, second, third, fourth and fifth periods, are you able to do that?

A. Yes.

Q. Then we will understand it better?

A. Yes, sir. The total nitrogen on this diet varies from one-half to one and one-half grams—no ounces—no grains, from one grain to nearly a grain and a half—no, that is one-half ounce, from one-half ounce to nearly three-quarters of an ounce. These figures are the metric system and have to be changed over, and the variation of the first period or the first subject was from three-sevenths to a little over half an ounce; approximately the same in the second period, not quite such a wide variation in the third period, varying from ½ounce to 6/10ths or 3/5ths. In the fourth period it varied from one-half ounce to about the same and also in the last or final period. The amount of purin nitrogen has not been established, or has no standard established for this diet, so far as I can find, because the man who got up the diet did not determine the purin nitrogen at that time, and we were obliged to take our figures here as applicable to these individual cases and to compare the experimental period with one of the normal periods to show any increase or decrease. They vary in the normal period from three to four or four and a half grains of nitrogen. In the experimental period from three to four or four and a half grains, and in the subsequent period practically the same. In the fourth period they varied from a trifle over three grains to six grains, and in the subsequent period from five or six grains to three grains. The results of the subject No. 2 are practically the same comparatively except with the variation in amount of urine in this subject in the first and second period varied more or less, but I do not consider that has anything to do with the experiment —

Mr. Miller: I object to —

The Witness (Continuing) Any man's urine varies in quantity from day to day as a matter of common knowledge, and the amount passed on one day reached eighty ounces and was followed by a dropping off on the following days simply because he did not have enough water in his system; he had excreted that before. The conclusions from these experiments can be summed up briefly, I think, by saying that the administration of caffeine even in large doses, comparatively large doses, as these were, is without any effect upon the amount of urine or upon the amount

of nitrogen which is taken to a certain extent as an indication of the intake and outtake of the body, nor does it show any very great variation in the purin nitrogen beyond that accounted for by the taking of that kind of nitrogen; nor does it have any effect upon the uric acid, the amount of uric acid.

Q. Now, doctor, did you ever conduct any experiments to determine the effect of caffeine on the central nervous system?

A. Yes, sir.

Q. And if so, state what?

A. We did some experiments on the central nervous system — on the human central nervous system. This is rather a difficult proposition because we have not the wide range with man that we have with animal experimentation. A person who is nervous or excited will respond to another person asking him a question sometimes quicker than he will if he is not nervous or excited or stimulated. If he is depressed or drowsy he will respond very slowly, and even with the same question on different days according to how the man feels. The time that elapses between the perception, as we call it, of that sound or that question, and the acknowledgment of the receipt, as it would be in case of a question, if it was a simple question, consumes a definite length of time, and if that time is measured carefully it can be taken to show whether there is stimulation or whether the man is stimulated, or otherwise, as to whether the time is shortened, which denotes stimulation, or lengthened, which shows depression, so to speak. To do this in an experimental way and accurately you can set up a clock which has two revolving hands on it, one of which indicates 1/100th of a second, and the other is divided into 1/1000ths of seconds, and by giving a sound prearranged so that a man will recognize it or can indicate when he heard that sound, and the time between the time he heard it, and he says he heard or shows he heard it can be measured — the sounds or stimulae received by the ear or by the eyes are better than those necessitating touch or pain or pin-prick, sometimes it is used, but that is objectionable for the reason that the person gets the habit of drawing away from heat or cold or shock during his life and he reacts by reflex action, which does not show that the stimulation passed through his brains, but it may have gone through his spinal cord —

Mr. Miller (Interrupting) I object to that because this witness has not shown he is a psychologist or that he has made a study of it.

The Court: I allow the methods to be shown.

The Witness: The experiments were performed as follows: This clock that measures the time is set up — and an electric circuit with two keys — when both keys are in circuit the electric current passes through the clock and one hand revolves — if the circuit is broken the clock stops —the first key is the operator's key, the man we speak of as the operator or subject — the experiments were conducted by another doctor and myself on each other; the other doctor is not addicted to the use of caffeine or does not use caffeine in any way, rarely takes a cup of coffee. As for myself, I take it — so we had or we represented two types of people so far as caffeine or coffee is concerned; the circuit being closed and open at the operator's end, the minute he closes that circuit the clock starts and the minute the subject breaks the circuit the clock stops, and the time between the turning on and breaking of the circuit done by the two operators represents the time taken for the subject to receive the sound and interpret and break the circuit by his finger on a lever. The normal reaction time was determined for both of us on a series of experiments on different dates involving this experiment. We determined what our reaction time, so to speak, in normal or under normal conditions; he had his usual breakfast, and I had mine. These experiments were performed about three hours or two hours later. We then took each of us, in addition to that, small doses of caffeine, three grains, and got our reaction time; we found that there was a shortening or lessening of the reaction time. We then took larger doses of four and six grains of caffeine, and were were enabled to still shorten the reaction time. We then did comparative experiments, using Coca-Cola — we took 6½ ounces or 6 2/3 ounces of Coca Cola syrup with water, not very much water, but Coca Cola syrup, and obtained our reaction time. The reaction time was not as quick as it was when we took the plain straight caffeine, in doses of four, six and seven grains.

BY MR. SIZER:

Q. Have you ever had any personal experience with the use of caffeine?

A. Yes, eleven years ago, this time of the year, I was working rather hard, very hard, getting about four to four and one-half hours sleep every night for a period of nearly six months, and I took four or five cups of strong coffee every day, and, in addition, three to five grains of caffeine approximately every evening, so as to work until one or two o'clock the next morning. That continued for nearly six months. When the work was over which kept me up

nights, the caffeine was discontinued.

Q. Did it result in any serious consequences to your health?

A. Not in so far as I have been able to observe.

Q. Do you drink any caffeine-containing beverage regularly?

A. I drink two cups of very strong coffee every morning and sometimes take coffee in the evening.

Q. And about how much caffeine in the course of a day do you average?

A. I have often analyzed the cup which I drink. I make it myself every day and it contains over three grains of caffeine; I will drink a cup and a half to two cups, which contains over three grains.

Q. Which contains about three grains?

A. It will run three and a half.

Q. And that would make six or seven grains of caffeine for the two cups?

A. Yes; and I sometimes take additional caffeine when I am going to be up late at night, and do any extra work.

Q. Have you been following that practice for a number of years?

A. Eleven years off and on, as I spoke of this other time when I did it continually for a long time.

Q. Is your general health good?

A. Fairly well most of the time.

Mr. Sizer: You may cross-examine.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What is your weight?

A. Two hundred and ten.

Q. And what is your age?

A. Thirty-eight years.

Q. Dr. Wesener, who has just preceded you, does he weigh more or less than you do?

A. I don't know.

Q. Well, you are capable of judging, you are a medical man, you are capable of judging as a medical man?

A. I imagine he is a little heavier, but not as tall.

Q. I didn't ask you as to the height. Now, as to the income and outgo you observed — I will ask you to state if it is not true that an insane man, a man with an utterly disordered brain, the brain may be measured by the same method that you applied and with approximately the same results, or that approximately the same results may be obtained?

A. I don't know of any experiments on the insane man

with this particular diet; I couldn't say.

Q. As a medical man now?

A. I am not a medical man in the sense of a practicing physician.

Q. Then these opinions which you have expressed here are not the opinions of a physician?

A. No, not of a practicing physician.

Q. Are they those of a man who is learned in the science of medicine?

A. Yes.

Q. Then, as a man who is learned in the science of medicine, I ask you if it is not true that you can take an insane man — one who has a disordered brain, due to caffeine, or anything else that overstimulates the brain, and get approximately the same results that you get as to nitrogen and urine?

A. I don't know, sir, I never did it.

Q. What is your opinion as a medical man?

A. I know of nothing on which to base an opinion.

Q. You are utterly unable to tell us or to express an opinion that is worth anything from your point of view?

A. So far as it applies to an insane person.

Q. You know of no reason why there should be any difference?

A. No, sir.

Q. Now, if any substance is detrimental to health or a harmful ingredient, can you so dilute it that its effect is nil or nothing physiologically?

A. Practically, Yes.

Q. Didn't you state, doctor, on the contrary, when you were examined as a witness in what is known as the "Bleached Flour" case at Kansas City, no, well, at New Orleans, then?

A. I would like to know what you refer to there.

Q. Well, were you asked this question (reading):

"Q. Is it possible, in your judgment, speaking of substances of which three or four grains was a medicinal dose, is it possible in your judgment to so dilute it as to make its effect nothing?"

And you answered "No, sir."

Mr. Hirsch: Let Mr. Miller state what that substance was.

Mr. Miller: I have stated a medicinal substance.

Mr. Hirsch: State the substance.

Mr. Hirsch: Nitrates, and one of which the medicinal dose was either three or four grains, according to this witness' statement. I am asking him as to a harmful ingredient, and I am proceeding, of course, on the theory that I

am going to establish caffeine is a harmful ingredient, and I think I have made out a prima facie case on that point.

The Court: What has this witness' opinion on that question got to do with it?

Mr. Miller: I asked him whether or not it is possible to so dilute a harmful ingredient as that its effect is nothing physiologically?

The Witness: My answer there practically yes.

BY MR. MILLER:

Q. I ask you now if you did not give previously the answer "no" in a former deposition or testimony when you were speaking of a substance that was harmful?

A. That answer was distinctly from a scientific point of view.

Q. Are you testifying now from a scientific point of view or a humane, or a physiological point of view, or what point of view?

A. I think my previous answer shows that I mean in the common acceptation of the word.

The Court: You state that you made that answer and that speaks for itself.

BY MR. MILLER:

Q. Did you make that answer?

A. Yes, sir; with certain qualifications, if I remember rightly, which show that it was made from a scientific point of view.

Q. Without reading but two answers —

A. If you read the context you will find.

Mr. Miller: I shall be glad to read the three:

"Q. Either from your experience or what you read, do you know what is a medicinal dose?

"A. From one and a half grains to three or four grains.

"Q. Now, is it possible in your judgment to so dilute that as to make its effect nothing?

"A. No.

"Q. You could not so dilute that but that it would have an injurious effect upon the individual to whom it was given?

"A. No, sir."

Now, I ask you as applied to caffeine, assuming that it is a harmful substance or deleterious ingredient, if it is possible to so dilute it that it would not have a harmful or deleterious effect on a person consuming it.

A. Yes, sir — harmful or deleterious effect, — yes.

Q. It would have a harmful or deleterious effect?

A. No, sir, not in my opinion.

Q. If that be true of caffeine, why would not it be true of any other chemical substance of which the medicinal dose was three or four grains?

A. In the nitrate case to which you refer — red, — no. That is, take the action of the nitrate with the blood, that we can demonstrate. We do not know with the same degree of exactness the chemical effect of caffeine on the tissues, though.

Q. The harmful effect, in your opinion, is one of quantity, is that it — depends on what is taken?

A. You mean the deleterious and harmful effect?

Q. That is what I said.

A. Yes, sir.

Q. It depends on the quantity taken?

A. Yes, sir.

Q. And that is true as to caffeine, but not as to other medicinal agents or harmful substances?

A. I do not know what you refer to as others, but in such instances it supplies to others.

Q. But as to the caffeine you think it does not?

A. I think the effect of the caffeine is dependent upon the dose.

Q. Are the effects of the administration of the harmful ingredient not ultimately the same physiologically?

The Court: What does that mean? I do not understand that.

Mr. Miller: Whether you administer it in one way or the other. Various methods of administering caffeine have been shown and I want to know whether the effect of administering from a physiological standpoint is the same.

The Court: Limit that to caffeine.

Mr. Miller: I do not think it should be confined to that, in view of the particular cases of other substances, and therefore I will note an exception.

The Court: Note the exception.

BY MR. MILLER:

Q. I would like to put that question in this form: Assuming that caffeine is a harmful substance or a deleterious substance or a poisonous substance, does the ultimate effect physiologically or not depend upon the manner of administration?

Mr. Sizer: I object to the form of that question. He can ask him whether or not the effect of caffeine depends on the administration, but I submit the first part of the question is not competent.

The Court: The exception is sustained.

Mr. Miller: Note an exception.

The Court: The exception may be noted.

BY MR. MILLER:

Q. Does not the increase in the quantity of any harmful ingredient introduced into the body have an increased harmful effect or produce a harmful effect, practically?

The Court: That question is ruled out unless limited to caffeine.

Mr. Miller: I am proceeding on the assumption that I am able to establish that caffeine is a harmful ingredient.

The Court: If you want to ask the witness the effect of caffeine, ask him, but we won't go into questions of that sort.

Mr. Miller: Of course that excludes every hypothesis laid with our witnesses and forces us to accept his conclusion.

The Court: He has not testified to any such thing on direct examination. He testified about certain experiments, and if you want to ask him about caffeine, you can do so; otherwise the Court excludes this question.

BY MR. MILLER:

Q. What is a medicinal dose of caffeine?

A. Taken from the Pharmacopœia, taking that as a standard, I believe it is one grain.

Q. What is meant by a dose?

A. The amount given —

Q. I know, but medical men have a particular meaning attached to the word dose. What is meant by a dose?

The Court: I do not know that I recall the particular evidence on that.

BY MR. MILLER:

Q. You do not know what a dose means, do you?

A. Yes, sir.

Q. What do you think is meant by a dose?

A. The amount given to a certain individual is a dose.

Mr. Sizer: The witness is not qualified as a practicing physician.

The Court: I do not see the bearing of that.

Mr. Miller: He stated his opinion on the stand was based in the first place on his knowledge acquired as a medical student and that the opinion he has given was in part that of a student of medicine and he professes to be a man learned in the science of medicine; and if I cannot ask that character of man what he means by the term dose when he repeatedly uses the word dose throughout the examination in chief, pray how am I to go on?

The Court: I ask you what was the bearing. If the

object was to ascertain what he meant when he used the word on direct examination, or what is a dose from his medical knowledge, you can ask the question. Answer the question, what you meant by dose on direct examination.

The Witness: I have answered it.

BY MR. MILLER:

Q. By dose is meant what is given?

A. Yes, sir.

Q. And what did you mean by the term large dose when you stated that one of these men — you say you have two in your laboratory — was given a large dose, namely, three grains, did you mean that was normal or abnormal?

A. Three grains?

Q. Nine grains a day, three at a time.

A. I consider nine grains a pretty large dose.

Q. You said three grains after meals or at meal times, and you stated, if I recall correctly, that that dosage was relatively large.

A. I have stated that he was given nine grains a day and his Honor asked me how that was given and I said he was given a dose three times a day, three grains three times a day. I did not say that three grains was a large dose.

Q. Didn't you in that same connection subsequently in forming your conclusion as to the effects of caffeine on these men, state that given in relatively large doses the effect would be so and so, having reference to three-grain doses?

A. No, sir; I had reference to the 24-hour quantity of diet as well as caffeine, because the urine was analyzed for the 24-hour quantity. If I had made my examination every three hours I should have based my dosage on what was given, the three or four grains.

Q. As you use the term relatively large dose, what did you mean?

A. I consider nine grains a large relative dose, larger than people would take in their coffee.

Q. What was the result of the control — the men you had under control, — as compared with the ones who took the caffeine? I would like to get those two results in a general way.

A. Each man was his own control.

Q. And how much he took after he left the laboratory you don't know?

A. I have their statements sworn to before the notary on the diet and the collection of urine; he gave it to me and he had no other diet.

Mr. Miller: I move to exclude the testimony.

The Court: That answer is excluded, but the testimony is not excluded. The jury will determine the value of the experiments.

BY MR. MILLER:

Q. Then I understand that you did base your opinion as to the result of this experimentation on the statements of these men made to you under oath?

A. Yes, sir.

Mr. Miller: Then I move now to exclude that, too.

The Court: The motion is overruled.

Mr. Miller: With an exception, please.

The Court: The exception may be noted.

BY MR. MILLER:

Q. Do you profess to know what effect the administration of caffeine has on the metabolism or do you know anything about that?

A. This set of experiments was performed solely for that purpose. I know of no other experiment in the literature on the subject of caffeine done under proper precautions — careful work.

Q. By proper precautions you mean to permit a man to go out and then accept the statement the next day?

A. He was not under my observation from six o'clock at night until eight o'clock the next day. I relied on his statements for that time.

Q. Did you state on your examination in chief that this administration of Coca Cola syrup and caffeine as the case may be, had any retarding influence on the metabolism?

A. No, sir.

Q. Did you state that it increased the metabolism in any way?

A. I don't think so. I don't think it has any effect one way or the other in general.

Q. The experiment you conducted on these men would not disclose what if any effect the administration of this drug might have on the brain because you did not examine that?

A. Not on the brain, except so far as manifested by symptoms, and the only symptoms mentioned were those that have already been excluded.

Q. The fact is, by dose you mean anything that produces symptoms, don't you — by medicinal dose you mean what produces a symptom?

A. You may give a dose and fail to get any observable symptoms.

Q. But what is ordinarily understood by a dose is what will give a symptom, give a result, in other words?

A. It may not give any result that you can see, but we do not know what is going on inside when you are working with a man.

Q. All the tests which you resorted to on the two men in your laboratory and which were based on those statements after they left you, prove nothing as to the consumption of brain or nerve tissue — did they disclose anything in that line?

A. No, sir.

Q. You made no observation as to that save just what you could see by the naked eye?

A. I would say also what they told me.

Q. And none as to the heart, either?

A. No, sir.

Q. You made no observation as to that?

A. They were under my observation and they said nothing.

Q. What do you mean by normal as applied to the urine?

A. In the connection in which it was used in these experiments, it was normal, found to be excreted by themselves, of the men who kept the data.

Q. You didn't see the men while they were away from you and you do not know how much they drank or what they drank while they were from under your observation?

A. Except that they made their statements to me under oath.

Q. As to what they ate while they were away from you, you do not know except from their statements?

A. That is all.

Q. Had you analyzed the urine up to the time you commenced to make this analysis?

A. Analyze their urine?

Q. Yes.

A. No, sir; because they were not on the diet which they began to take.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Was there anything in the appearance or conduct of these two men during the time they were going through the experiment to indicate any abnormal waste of brain or nerve tissue?

A. Absolutely not. I might say in that connection that one of the men had been in my employ two years and he appeared perfectly normal.

Q. I will ask you whether or not you have any personal knowledge of any of these cases to which counsel for the

Government referred on cross-examination of Doctor Wesener as being cases showing serious results from the use of caffeine.

A. The only case that I can recall is one he quoted by Doctor Ammore, but I have not consulted it since he spoke of it. I understood he wrote an article on Coffee in the Boston Medical and Surgical Journal.

Mr. Sizer: Did you refer to that, Mr. Miller?

Mr. Miller: I referred to all of those.

The Court: Attention was called to a hundred and fifty cases and many of the cases not named. Let him take the books and examine as to that.

BY MR. SIZER:

Q. Now, state what you know about that case of Doctor Ammore — the case that he reports, what you know about the facts.

A. That is, supposing it is the case about which I know.

Q. If you do not know, you had better come down and read the case and I will put you back on the stand.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Where did you conduct this supposed experiment about which you have talked, where one man ate caffeine and one Coca Cola?

A. You mean, my experiment?

Q. Yes.

A. In my laboratory.

Q. Is it not true that Doctor Tyrode who testified was first asked by you to conduct that experiment because you did not know how to conduct it?

A. No, sir.

Q. Didn't you apply to Doctor Tyrode first?

A. No, sir.

Q. You had no conference with him?

A. No, sir.

Q. You do not know the Massachusetts Medical Association?

A. Yes, sir.

Q. And the Boston Medical and Surgical Journal.

A. Yes, sir.

Q. Those are reputable publications and a reputable association?

A. Yes, sir.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Now, I hand you the report of the Ammore case and

I ask you to state if you know anything about that case, and if so, what.

A. I read this case some two years ago, nearly two years ago; in connection with this publication Doctor Ammore was a personal friend of mine when he was alive. and he brought to my laboratory certain coffee extracts which he himself prepared along the line about which this article was written, and he asked me to analyze them.

Mr. Miller: I object to any statement of what took place between him and Doctor Ammore.

The Court: I sustain the objection.

Mr. Sizer: Here is the report made by Doctor Ammore as to certain experiments and I submit that anything that occurred between him and the witness is competent.

The Court: I have not ruled that that article by Doctor Ammore is competent yet. I will wait until they present it. At this point I think I may say something in regard to my ruling as to Doctor Wesener's views as to the experiment conducted by certain of the Government witnesses.

I intended to limit the ruling to allow the Doctor to state his opinion of the accuracy of the methods employed for determining accurate results, and my recollection is that in his answer he went a little bit beyond that and stated matters that were somewhat argumentative as bearing on the effects of those results on this litigation, and I should like to have that answer written out so as to exclude part of it. I think it is my duty to exclude a portion that went beyond what I intended to admit.

(Witness excused.)

JOHN F. QUEENY,

the next witness called on behalf of the Claimant and Intervenor, The Coca Cola Company, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Give your name.

A. John F. Queeny.

Q. Where do you reside?

A. St. Louis.

Q. What connection have you with the drug and chemical trade?

A. I entered on a job in the drug business some thirty-nine years ago when I was twelve years old as a boy. I got a job in a drug house and from that position I went into the order department, and then into the wet room where the essential oils and extracts were put up; then to the shipping room, then city buyer, finally in charge of

city sales, with John E. Kings, of Chicago. Went from there to New Orleans as buyer and remained there ten years, went from there to Los Angeles, and remained there a year; and then to St. Louis with the Meyer Bros.' Drug Co., with whom I was connected for twelve or thirteen years. In that period I omitted one period of three years when I had charge of the sales of the Merck & Co., chemical company, and I opened this branch for Powers & Whiteman at St. Louis.

Q. What opportunity have you had to gather statistics on the question of tea consumption, and have you the bases of your statistics with you?

A. I have had every opportunity for the reason that in the company of which I am now president and general manager we buy quite considerable quantities of tea and occasionally of coffee.

Q. Have you compiled any statistics showing the sale of coffee and tea, and if so, from what did you compile them?

A. I have compiled some figures on certain periods from the statistics issued by the Bureau of Statistics of the Department of Commerce and Labor, covering a period since 1824.

Q. Have you those books with you?

A. Yes, sir. The figures I have here taken from those statistics at certain periods and I have made statements covering periods from 1850 and from 1870 and 1880, and 1900 and 1904, and with permission I will put them on the board.

The Court: I have not ruled on that yet.

Mr. Hirsch: We have the books.

Mr. Miller: We have no objection to that. Let him make the statement.

BY MR. HIRSCH:

Q. Now give us the amount of coffee and tea taken from those statistics.

A. I have calculated the caffeine in the tea at 2¾ per cent., and I have calculated the coffee at 1 3/10 per cent.

Q. Now explain how you work that out.

A. The Bureau of Statistics' figures of the Department of Commerce and Labor, published July, 1905 — I have taken their figures of the importations and also their figures of the exports, and deducting that leaves the quantity left in the country for consumption.

Q. From that did you or not obtain the exact figures?

A. I have not put down here the exact figures because they run into so many figures — for instance, when I say 28,000,000, the quantity is over 28,000,000. Every figure

here is an underestimate rather than the exact figures in the statistics as they are given here.

I have tried to make them sort of general, and I also have here the exact figures which I shall be pleased to read.

Q. Have you figured out the caffeine content, and if so, how as to the tea and coffee for the year 1909?

A. Yes, sir; I have.

Q. Give that.

A. The figures I have of the world's consumption of coffee were taken from the Coffee Exchange of the City of New York and the consumption of caffeine during that season of 1909-1910 was 2,388,998,568 pounds. I have not calculated the caffeine content in that coffee.

During the season of 1908-1909, the quantity was 2,461,747,464.

For 1907-1908, 2,313,355,976.

Q. Where did you obtain the percentage of caffeine in that coffee? Did the Government give the statistics?

A. The percentage I calculated on was based on our own experience and I have the Government figures.

Mr. Miller: I do not object to that. Just give it to us.

The Witness: The Government figures are 1.35 per cent., but I based it on 1.3 per cent.

The world's production of tea as shown during the season of 1909-1910 is 1,200,000,000 pounds and that is taken from the United States Consular report of Nov. 15, 1910.

BY MR. HIRSCH:

Q. What about the percentage of caffeine found in tea?

A. I calculated on the basis of 2.75 per cent. The Government figures run a little over 3 per cent.

Q. Can you figure approximately how much caffeine was in the entire coffee for the year of 1909?

A. Yes, sir.

Q. Give us that statement.

A. Over 60,000,000 pounds of caffeine. I have here also the figures of Matte and Paraguay tea which are quite important in my opinion in the quantity of caffeine to be shown. May, 1905, 110,000,000 pounds of Matte or Paraguay tea, containing caffeine 1.25 per cent., showing consumption of caffeine in Matte of 1,375,000,000 pounds.

I have also the figures of cocoa, if they are of interest. I had the figures on cocoa made out, but I heard some argument on the content, so I modified my figures. The consumption is changed in the quantity. In the United States in 1894 over 17,000,000 pounds.

1897, over 21,000,000 pounds.

1900, over 41,000,000 pounds.
1903, over 62,000,000 pounds.
1909, over 117,000,000 pounds of cocoa.

I have figures also on the consumption of other countries, if they are of interest.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Now, on that importation of cocoa, of course, as a result of that, the cocaine, the morphine, and the opium had increased rapidly?

A. This is cocoa from which chocolate is made.

Q. But, as the effect of that importation, morphine, opium and cocaine have rapidly increased in consumption.

A. I think they have decreased of late.

Q. Have you figures on that?

A. I have statistics, I think.

Q. Will you oblige us with them, not now, but at your leisure, and verify that statement?

A. I don't put that forward as a statement. I am speaking of my own practical observation.

Q. I asked you to do that and ascertain and then file as exhibits in this case.

A. You mean the comparative consumption of opium and morphine and cocaine?

Q. Morphine, opium and cocaine.

A. Very little morphine is imported.

Q. Also show the consumption of coca.

A. I will do all of that if the records are in these statistics that I have.

BY MR. HIRSCH:

Q. For how many years?

Mr. Miller: The last ten years.

The Witness: Of course, if they are not there, I cannot give them.

BY MR. MILLER:

Q. How far do you go back with the tea and coffee?

A. That is given here. This is issued by the Department of Commerce and Labor and it applies to tea and coffee and all caffeine-bearing products.

Q. You will be good enough to compile the statistics as to the facts of the consumption of opium and morphine and cocaine, covering the same time as you have covered with this coffee and tea matter.

A. I will do so. But there is very little of cocaine imported, as such, and very little morphine, for the reason that the duty makes their importation prohibitive, but the raw material is imported, but no one can say whether

the articles go into cocaine or whether they go into some pharmaceutical houses to make fluid extracts of coca. It is almost impossible for any one to give accurate information or an accurate statement as to those things, because so many of those are consumed in that way. Opium enters into so many preparations, paregoric and laudanum, and they don't show the quantity of morphine produced from the quantity of opium.

Q. But that don't apply to coca?

A. Coca also enters into various preparations.

Q. I am speaking of what is imported under the name of coca.

A. I doubt if there is any accurate record kept of that in the statistics, but I will refer to them. You cannot get any record of cocaine produced from the coca leaf, however.

Q. I don't ask that.

A. I thought cocaine was one of your inquiries?

Q. I did ask as to whether or not the consumption of it was on the increase.

A. I don't know how to get any record for that.

Q. If you cannot ascertain that, we will pass over that. You are a very large manufacturer of caffeine?

A. We are manufacturers.

Q. You sell it to the world?

A. We sell it to the United States.

Q. You sell to the Coca Cola Company?

A. Some to the Coca Cola Company.

Q. Now, in compiling these statistics as to the tea and coffee, you did not compile statistics as to the people who have been poisoned by the caffeine contained in tea and coffee?

A. We are in the manufacture of caffeine and we never heard of anybody being poisoned by it.

Q. You did not examine the works referred to this morning in your presence as containing cases of tea and coffee poisoning?

A. No, sir; it would hardly be necessary. In the line of work we are engaged in, if I heard of any poisoning, I might follow it closer.

DR. RUDOLPH WITTHAUS,

the next witness called on behalf of the Claimant and Intervenor, The Coca Cola Company, first duly sworn, testified as follows:

DIRECT EXAMINATION,

BY MR. SIZER:

Q. Where do you live?

A. West Thirtieth street, New York.

Q. What is your occupation?

A. I am a chemist and toxicologist, and teacher of those subjects.

Q. State your training as a chemist and toxicologist.

A. I graduated from Columbia College in 1867. Then I studied in Paris at the Sorbonne and the College de France. I graduated in medicine at the University of the City of New York in 1875.

Q. Have you had experience as an author and instructor in either chemistry or toxicology?

A. I have. I began teaching of those subjects in 1876 and I have been doing so ever since.

Q. Now, as an author—have you written any books?

A. Yes, sir. I wrote a small book on chemistry for medical students. I wrote a laboratory guide for medical students. I wrote a chemistry for medical students now in its sixth edition. I wrote the toxicological parts of the system of medical jurisprudence, the second edition of which is now in press.

Q. What is that work?

A. Witthaus & Becker's Medical Jurisprudence and Toxicology.

Q. Are you a teacher of chemistry and toxicology in any institution?

A. Yes, sir, I am a teacher of chemistry and toxicology, and medical jurisprudence in Cornell University, and Emeritus Professor in the University of Des Moines.

Q. Have you acted as chemist of any municipal body?

A. I was chemist of the City of Buffalo when I lived there, and also chemist of the State Dairy Commissioners of the State of New York.

Q. Have you had any experience testifying an an expert, either on the subject of chemistry or toxicology?

Mr. Miller: I will agree that he is an expert witness, if you want me to agree to that.

Mr. Sizer: I prefer to have the witness answer that.

Mr. Miller: Then I object to the question.

The Court: I sustain the exception.

BY MR. SIZER:

Q. What is toxicology?

A. The science of poisons.

Q. In how many different ways and methods can a substance taken into the body produce either poisonous or deleterious results?

A. A substance may produce deleterious results in several different ways. In the first place, it may act me-

chanically and produce disturbances in that manner. For instance, in the case of glass or other fragments, or by physical action as in the case of extremely hot water, or it may produce deleterious results by local chemical action which destroys the tissues with which it comes in contact, like sulphuric acid, or it may produce deleterious results by organized material which occurs in the system and produces detrimental results, and it may act chemically upon the blood as in the case of illuminating gas, or it may be carried by the blood to other parts of the body and there produce chemical action which is detrimental, which is the case in true poisons; or substances can be taken in excessive quantities, substances naturally taken may also when taken in excessive quantities produce deleterious results by the increased quantity.

For instance, you may take too much food of one kind or another.

Q. Does your answer cover all the methods by which substances taken in the body may produce deleterious results?

A. All I know of.

Q. Do you know the substance caffeine?

A. I do.

Q. Is caffeine treated of as a poison in any American work on the subject of toxicology, or in any work written in the English language?

Mr. Miller: That is simply another way of presenting what the witness should state. I suppose this man has an opinion of his own which he is prepared to give.

The Court: I think the exception is well taken.

Mr. Sizer: Without wanting to argue the question further, the particular subject is treated of in works that are standard on the subject and it seems to me it would be evidence as to whether it was considered in that class.

The Court: It seems to me that the objection is well taken. It is simply a way of stating the medical authorities, and I rule that is not competent.

Q. Now, would this substance caffeine act deleteriously when taken into the human system in any of the methods and manners heretofore described by you, and if so, in which of them?

Mr. Miller: I submit he should describe the effect and then let the jury determine whether it is deleterious or not.

The Court: The exception is well taken. He can state the facts with the qualification that I have heretofore stated, whether they have injurious effects on the general health, and he can describe the specific effects without

giving the general.

BY MR. SIZER:

Q. I will ask you to describe what the effect of caffeine is when taken into the system, especially caffeine taken in beverages containing it, and then you may state whether or not in your opinion the effect you describe is injurious to the general health of the person taking the caffeine.

A. It is absorbed from the alimentary canal, more or less, and carried into the blood, and dissolved and carried into the several organs and tissues of the body. If taken in exceedingly large quantities or by a person who is afflicted with an idiosyncrasy against it, it may produce unpleasant or deleterious results. That is the only way in which I conceive that it can do that.

Q. Would those results be serious or of a permanent nature, or of a temporary nature?

A. Of a temporary nature.

Q. Is there any reported case known of death—that is, any authentic case of death, resulting from caffeine?

A. None that I know of.

Mr. Miller: I object to that question for the reason heretofore given, because that is another way of corroborating the witness by medical authorities.

The Court: The exception is well taken. He may state his opinion as to whether caffeine can produce death as the result of his experience and reading, but he cannot state on direct examination the contents of any medical authority.

BY MR. SIZER:

Q. From your experience as a toxicologist and from your reading of the literature, is caffeine a substance which in any quantity produces death?

A. I do not know of any such case.

Mr. Miller: In so far as that is based on literature, I object to it. That brings in the same question again.

The Court: The exception is overruled. I have uniformly endeavored to rule that while a witness cannot state the effect of the substance of the authorities on direct examination, he can state his own experience as an expert based on his own experience and observation and experiments and reading of general scientific authorities, and then if it appears that his opinion is based in part on the reading of the scientific authorities, he can be cross-examined on that. That is the uniform rule that I have endeavored to follow.

BY MR. SIZER:

Q. I will ask you if you have made search through the

literature to ascertain whether or not you could find any such case there.

A. I have.

Whereupon, at 2 o'clock P. M., Court adjourned until Monday morning, March 27, 1911, at 9 A. M.

CHATTANOOGA, TENNESSEE

MONDAY MORNING, MARCH 27, 1911.

NINE O'CLOCK A. M.

Court met pursuant to adjournment.

Appearances: Same as before.

CLAIMANT'S EVIDENCE CONTINUED.

Mr. Miller: We asked for some data in connection with Doctor Vaughan's testimony and I understood that counsel was to get it.

Mr. Hirsch: I have it now written out in longhand and am only waiting for it to be typewritten to deliver it to you.

DR. RUDOLPH WITTHAUS,

resumed the stand for further examination and testified as follows:

DIRECT EXAMINATION CONTINUED.

BY MR. SIZER:

(The last question and answer of the previous hearing were read to the witness.)

Q. You say you have made search for that kind of cases. Did you find such cases?

A. Cases of what?

Q. Death resulting from the use of caffeine.

A. I did not.

Q. Do you understand the German language?

A. I do.

Q. Have you read the literature,—the report of the Allard and the Zenetz cases in that language?

A. Yes, sir.

Q. Are they cases of death by caffeine? Either one of them?

A. No, sir.

Q. Now, speaking of excessive quantities of caffeine being taken. What would be the nature of the result from that? Would the result be temporary or of a serious nature?

A. Temporary.

Mr. Miller: That question was asked and answered on

Saturday.

Mr. Sizer: I do not recall it, but if it has been asked I do not care to proceed further with it.

Mr. Miller: It was asked and answered on Saturday that it was of a temporary nature.

BY MR. SIZER:

Q. Would the effects of caffeine or any other substance of that kind when administered to animals necessarily afford conclusive evidence of the effect of the same substance when given to human beings?

A. They would not.

Q. Why?

A. Because the effect of different drugs on different animals is different in kind and in character, and you cannot argue from the effects on animals as to the effect on man, except merely as a preliminary indication.

Q. Have you had any personal experience with respect to the use of caffeine in beverages?

A. I have.

Q. State what that experience is.

A. I have taken coffee for over fifty years.

Q. In what quantity?

A. In quantities varying all the way from five to eight grains of caffeine a day.

Q. Five to eight grains?

A. Of caffeine.

Q. In the form of what?

A. In the form of coffee.

Q. Has that taking of caffeine in the form of beverages ever resulted in any impairment to your health or injury to your constitution?

A. Never.

Q. What is your age now?

A. Sixty-four.

Q. Is caffeine taken in the form of beverages a habit-forming substance?

A. Not from my experience. When I don't get it, I don't miss it.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. You say you wrote a work on toxicology?

A. Yes, sir; I did.

Q. In that book you undertook to define a poison?

A. I did.

Q. And you also undertook to collate the statistics for a nine-year period as respects to certain poisonous drugs, did you not?

A. It is my recollection that I did.

Q. In that table of statistics you gave a number of poisonous substances?

A. I took those from other authors.

Q. Well, you indorsed them and approved them, of course, or you would not have put them in your book?

A. Yes, sir.

Q. You say you searched the literature also in connection with caffeine?

A. Yes, sir.

Q. In searching that literature did you consult your own book before you came down here to testify?

A. I don't think I did.

Q. You don't think you consulted it?

A. Not in that regard.

Q. Now, I will ask you to refer to pages 56 and 57 of your own book and state if in connection with poisonous drugs, where reported cases of poisoning were shown, you do not show in connection with arsenic and other poisonous substances cases of caffeine poisoning during the nine years.

A. This is a table taken from somebody else. I don't see the authority for it.

Q. Just simply look on page 56 at the pencil mark check there.

A. Yes, sir.

Q. Don't you see caffeine there?

A. Yes, sir.

Q. Don't you see caffeine there?

A. Yes, sir.

Q. Don't you see thirteen cases in nine years?

A. Yes, sir.

Q. Do you see arsenic along in that same connection?

A. Yes, sir.

Q. Now, you say you endorse that collaboration, else you would not have put it in?

A. I did not endorse it. Those are occurrences that date back to 1880. I have no knowledge of them.

Q. If you consulted the literature before you came down here to testify, didn't you consult the literature from which you took that table for medical students before you came down?

A. This book was not written for medical students.

Q. For whom was it written?

A. Lawyers.

Q. A book on toxicology for lawyers?

A. Yes, sir; lawyers and doctors. That is a part of the system of medical jurisprudence intended solely for

the use of physicians and lawyers in the trial of cases.

Q. That is one of the books you testified on Saturday that you wrote—that is, a treatise?

A. Yes, sir. That table was taken from somebody else; whom it was I have forgotten.

Q. It is taken from Kobert?

A. Yes, it is, and so stated, I see.

Q. You considered Kobert a standard authority or you would not have put it in?

A. I don't think Kobert stated that of his own knowledge.

Q. I ask you if you didn't approve that as a standard text, if you would have put it in your book and you said you would not. Do you wish to modify that statement?

A. I don't know,—what?

Q. That you would not have inserted it if you did not approve it.

A. Oh, yes, I would. A great many cases are reported and ascribed to certain substances which are not attributable to that subject. I took this table bodily and Kobert is responsible for it, not I.

Q. That is a volume of the treatise you wrote?

The Court: There is no question about that. He has so stated.

A. It is.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. I want to find the one you wrote and that I understand to be the one. Now, I ask you, in writing that and sending it out to physicians, why it was that you inserted a table of statistics showing caffeine poisoning if you did not believe that table was reliable?

A. None of these are cases of death.

Q. How do you know that?

The Court: Answer the question, Doctor. That was not the question and we will get along faster if you will answer the question.

BY MR. MILLER.

Q. How do you know they are not cases of death?

A. Because I have not found them reported elsewhere.

Q. What?

A. I have not found the particulars of them elsewhere.

Q. And because you have not found them elsewhere you conclude that they are not cases of death?

A. There are no details about them, there is no way of telling what they are.

Q. Now, preceding this table, didn't you use this language:

"Statistics of cases of poisoning can best be but fragmentary and incomplete, as in all cases the great majority of non-fatal, accidental and medicinal poisons escape record entirely"?

A. That is true.

Q. By non-fatal you mean those that do not result in death?

A. Yes, sir, I do.

Q. "While in such records of vital statistics as are officially kept, particularly in the United States, either the nature of the poison is not determined with sufficient accuracy or all cases are classed under the general head of poisoning. Confessedly, such records take notice only of fatal cases."

A. Yes, sir.

Q. By fatal cases you mean death cases?

A. Yes, sir; I do.

The Court: That is perfectly obvious.

BY MR. MILLER:

Q. Then I ask you how you know if immediately following that you gave a record of thirteen cases and you say they have records only of fatal cases—how you can conclude that those thirteen are not death cases?

A. I do not know anything about those cases at all.

Q. Then when you answered counsel that you did not know of any recorded cases of death and had searched the literature, you meant you had not followed down those thirteen cases you saw and that you had put in your book, to see whether they were fatal cases or not?

A. I don't know anything about those cases at all.

Q. The search you made involved those thirteen cases you reported?

A. I didn't report those thirteen cases.

Q. Then the thirteen cases you put in your book?

A. I quoted Kobert's statement.

Q. You didn't follow them down to see whether they were fatal?

A. I searched all the literature I could find and I found no further mention of them.

Q. Now, in defining the effects of a poison you stated: "It may act chemically on the blood or it may be carried by the blood to other parts of the body and there produce chemical action which is necessary and which is the case in true poisons." What do you mean by "true poisons" in that connection?

A. As distinguished from corrosives.

Q. What do you mean by corrosives?

A. I mean substances like the mineral acids and mineral alkalies which destroy tissues with which they come in contact by virtue of their chemical action.

Q. Then substances that destroy the blood or destroy the tissues by virtue of its chemical action you do not call a true poison?

A. I don't say that.

Q. Do you say it now or not?

A. They also have a poisonous action.

Q. I know, but I ask you if you call that a true poison, if that is what you mean when you use the term "true poison" here.

A. Not if brought in direct contact with the tissue. If carried by the blood to the tissue, they are true poisons.

Q. Caffeine is carried by the blood to the tissues and brought directly in contact with them?

A. That is a contradiction in terms.

Q. Is it or not?

A. Your question is a contradiction in terms. If it is brought directly in contact with the tissues, they are not carried there by the blood.

Q. Is it not first taken in the stomach and then by the blood drawn in contact with the tissues, brain and muscles?

A. True poisons are.

Q. Is not caffeine?

A. Yes, sir; I presume so.

Q. Then to that extent it is like a true poison, of course?

A. Oh, not necessarily. It must be harmful to be a poison at all.

Q. Now, in order to tell us of the effects of caffeine on the human system, you of necessity were required to study pharmacology?

A. What do you mean by pharmacology?

Q. I mean the science which deals with medicines and their effects on animals.

A. That is not pharmacology. This is pharma-dynamics.

Q. Did you study it or not?

A. I studied it with a prolonged experiment on myself.

Q. How?

A. Taking it every day.

Q. That is coffee?

A. Yes, sir.

Q. I notice there is a co-collaborator on this work of yours, one Dr. W. M. Bullard of Boston.

A. He is not a collaborator on that volume.

Q. It is marked so.

A. There are four volumes.

Q. The volume you wrote, he is marked as one of the associates.

A. I wrote everything between those covers myself.

Q. Do you know Doctor Bullard?

A. I never saw him.

Q. He was one of the gentlemen who assisted you and your associate, Doctor Becker, in preparing these four volumes of this work?

A. No, sir; in preparing the article on electricity.

Q. In preparing articles?

A. In preparing an article on electricity.

Q. In the article by Doctor Bullard, dealing with coffee and tea poisoning, which were referred to the other day in your presence, I will ask you if you ever had any occasion to study those articles since they were presented to Doctor Wesener the other day.

A. I have not.

Q. You were not in Doctor Wesener's room yesterday when they were submitted to him for consideration?

A. No, sir.

Q. Have you ever seen those articles?

A. I don't remember.

Q. When you stated there were not any recorded cases as far as you knew of death due to caffeine poisoning, you did not mean to be understood as stating that there were not a great many cases of poisoning from which people recovered?

A. There were no cases of serious poisoning.

Q. Did that mean that you had examined the article written by Doctor Bullard?

A. I did not — I do not recall whether I did or not, but I examined a great many and may have examined those among others.

Q. Would you, after you are excused from the stand, examine those articles and then state whether or not you had ever seen them before?

A. Yes, sir.

Q. If you have, and then are prepared to say whether or not from a reading of them they are due to caffeine that was in the tea and coffee, I would like to have you recalled to the stand and let you make an explanation about it.

A. Very good.

Q. Now, you have read a treatise by Doctor Hare, with whom you have been associated for several days over here, haven't you, as respects caffeine?

A. I do not recall that I have.
Q. You are a registered practitioner of medicine?
A. I am, but I have never practiced.
Q. At any rate, you know Doctor Hare's work to be a reputable treatise?
A. Yes, sir.
Q. And for you to determine as to the toxic effects of a drug, what is necessary for you to study?
A. Works on toxicology.
Q. Anything else?
A. I hardly think so.
Q. You merely, when you write books on toxicology, study the previous writers on that subject and make no experiments of your own?
A. I have made experiments—many.
Q. Did you make any experiments with caffeine?
A. I have not.
Q. Did you ever make any with Coca Cola?
A. I have not.
Q. Are you prepared to say whether the treatise by Doctor Hare is a reputable and standard authority or not?
A. I do not admit any authorities in matters of science. They are very reputable writers, but they have not the force of authority.
Q. Are you prepared to say that this work by Doctor Hare is a standard treatise?
A. Yes, sir.
Q. Now, as respects the physiological action of caffeine, I read this from Doctor Hare—

The Court: Has he made any statement on direct examination about that?

Mr. Miller: He has undertaken to tell what the effect was on the human system and he said it was based on reading of literature, in part.

BY MR. MILLER:

Q. (Reading)

"Physiological action. Nervous system.—On the nervous system caffeine acts as a rapidly acting stimulant, exerting its chief influence on the brain and the spinal cord."

Q. Do you agree to that or not?
A. I do.
Q. (Reading)

"By its cerebral effect it causes increased rapidity of thought, by its influence on the spinal cord it increases the reflex activity, and for this reason it is said to make people nervous."

Do you agree to that?

A. I have heard that statement made many times, but I have never had that experience.

Q. Then speaking from your personal experience you do not agree to that, but speaking from the reading of literature you do agree to it?

A. I agree to it by experience all except the nervousness. I do not agree to that.

Q. But all except what?

A. The nervousness.

Q. And where you disagree, that is based on your personal experience?

A. Yes, sir.

Q. (Reading)

"It is important to remember that it has no effect on brain protoplasm except to stimulate it, and that ultimately a brain driven along by caffeine breaks down by the concentration of its energy for the time being in one effort."

A. I have not experienced that.

Q. You have not become insane as the result of drinking it?

A. No, sir.

Q. If your brain should be broken down, driven along by caffeine by the concentration of its energy for the time being, you would be insane or reason would be dethroned, that is what is meant by the breaking down in one effort?

A. I suppose if the thing happened, it happened.

Q. Now, as to the circulation: (Reading)

"Caffeine has been supposed to increase the pulse-rate and blood-pressure by stimulating the heart-muscle, but from recent studies in the United States and abroad it would seem probable that these changes are indirectly produced and due chiefly to its stimulating action on the nervous system."

Do you agree to that statement or not?

A. I do not.

Q. (Reading)

"Clinically, it certainly seems to raise the blood-pressure in almost every instance where it is used."

A. I do not know.

Q. You do not know how that is?

A. No, sir.

Q. Now, speaking of the untoward results of caffeine on the human system: (Reading)

"Caffeine often produces so much insomnia when given in cases of cardiac diseases"—

that is, heart disease—

"that its use has to be discontinued. If its use is persisted in it may produce a condition of delirium closely resembling that of alcoholism; and if too large doses are used, or it is too frequently repeated, it may cause a decrease in urinary flow by causing spasm of the renal vessels."

A. That may be true.

Q. (Reading)

"The writer has also seen a marked rise of temperature follow its use in the doses of 2 grains (0.12) three times a day, but this is unusual."

A. I presume Doctor Hare is truthful in his statements.

Q. (Reading)

"In certain persons the habitual use of coffee may cause insomnia, tremors, palpitation, tinnitus aurium, gastralgia, and emaciation."

A. I have seen that statement.

Q. You found that in the literature?

A. Yes, sir.

Q. Now, in speaking of coffee in that connection and caffeine in that connection, you understand, of course, that it is the caffeine content of the coffee to which Doctor Hare is referring?

A. Undoubtedly.

Q. When you stated that caffeine in large quantities given to a person who was afflicted with an idiosyncrasy against it, it might produce certain deleterious results, what did you mean by "idiosyncrasy against it"?

A. Intolerance. Some people are intolerant of a great many articles of food. An individual peculiarity of that person.

Q. A great many people are more tolerant of various kinds of drugs than others?

A. Yes, sir.

Q. Of course, when a medical writer like Doctor Hare or yourself is speaking of the effects of a drug or the administration of a drug as there in the case of two grains of caffeine by Doctor Hare, you mean an adult unless there is a limitation put on it, unless it refers to a child or a growing person, do you not?

A. Yes, sir.

Q. And when you stated that the results of the administration of caffeine would not be of a permanent, but only of a temporary nature, how do you know without having read the thirteen cases that you put in your book to see what the effects were, Doctor?

A. I have read reports of quite a number of cases, pos-

sibly I have not read the reports of some of those; there is no indication there to tell what those cases were.

Q. Well, your search, you will admit, was not very thorough, or you would have read the thirteen cases in your own book?

A. No, there was no source there to tell you where to look. This table, you see, I took from Kobert.

Q. Well, this table you took from Kobert, and you gave the page of the book?

A. Yes, sir.

Q. Well, if you did want to read about them, Kobert, that is in literature, as I understand, why did you not read Kobert?

A. Well, I read Kobert, you understand, that is all he said about it.

Q. Now, then, from your reading of Kobert, I ask you what was the result of these thirteen cases?

A. I don't know.

Q. Then, if you do not know, how can you state the results were only temporary?

A. Because in all other cases there were only temporary, all cases I could find in my extended research, of any report, beyond merely a numerical expression, were temporary.

Q. And that is the best explanation you can make of what you mean by the word "temporary" in that connection?

A. I think it is a good one.

Q. Now, when caffeine is taken into the system, it is broken up into three ingredients, or substances, known as paraxanthine, theophyllin and theobromine?

A. It is demethylated usually.

Q. And that is into these three substances?

A. I don't know, no.

Q. Do you know how that is?

A. It is reduced to one of the demethyl xanthines, but which one I don't know, and I don't think anyone else knows.

Q. Then you are not prepared to say how that is?

A. No, sir.

Q. Do you or not regard paraxanthine as poisonous?

A. Yes, sir, moderately.

Q. And you know that theophyllin, or its synthetic reproduction, theocin, is poisonous?

A. Yes, sir.

Q. And that was what was reported to have killed the patients in the Allard cases?

A. Yes, sir; a synthetic product.

Q. Then you are not prepared to say that its physiological effect would be at all different from that of theophyllin?

A. No, sir; I am not.

Q. Now, if it be true that xanthine, I mean that caffeine taken into the system is broken up or dimethylated, as you stated—

A. (Interrupting) Demethylated—not dimethylated.

Q. Well, in one or more of these three groups—

A. It is demethylated and not dimethylated.

Q. Well, I mean demethylated.

A. Yes, sir.

Q. And broken up into one or two or three groups?

A. Yes, sir.

Q. And one of the groups is poison, paraxanthine, and another one of the groups killed patients in the Allard cases, how is it that you can say that caffeine is not a poison, when it produced at least two of these two groups that kill people?

A. I don't admit it.

Q. Those two groups of caffeine—

A. (Interrupting.) I don't admit that theocin killed these people.

Q. You don't admit it?

A. No, sir.

Q. But they are officially reported as being cases of theocin poisoning?

A. They are so reported, yes.

Q. But you were not there and didn't see them, and therefore do not admit it?

A. I don't admit it because of the condition of the patients; there were other causes of death there besides theocin.

Q. Well, there is always a possibility that a man dies from something else, although you administer arsenic to him?

A. Sometimes.

Q. Now, reading from this one of these Allard cases: (Reading.)

> "Our observations show most clearly how unwarranted it is to apply the results of toxicological tests of drugs on animals without qualification to human beings."

A. I so stated myself.

Q. The lethal quantity of theocin per pound to be in animals, as a rule, from five-tenths of a gram, which in amount would correspond to the total dose—

The Court: (Interrupting.) What are you reading

from, Mr. Miller?

Mr. Miller: From one of these cases.

The Court: That is not with reference to the fact of the case, but just a general statement.

Mr. Miller: That is a case that was put in evidence.

The Court: That is a general expression. You may read it so far as it relates to the facts of the case, but the general expression, just eliminate that.

Mr. Miller: I asked this witness to take this case, or reported case—

Mr. Sizer: What cases are those?

Mr. Miller: The Allard case on theocin poisoning by Edward Allard, Assistant Physician of Clinics, and ask him to point out from that Allard case what it is therein that distinguishes that case from what it was reported to be, namely, one of theocin poisoning.

The Court: Well, just hand the book to him.

Mr. Miller: I have the translation.

Mr. Hirsch: I have the German text.

Mr. Miller: Let him have that, and I will keep the English.

The Witness: The patients were both in an advanced condition of disease. It was given as a diuretic. The patients were suffering from edema. They might as well have died from edema as from theocin, or the causes of the edema.

Q. You stated edema would have caused hemorrhages in the stomach which were found in that case there, which is reported in that case?

A. I am not a pathologist.

Q. Then you are not prepared very well to pass on that case if you are not prepared to deal with those conditions, are you, Doctor?

A. Cases of advanced disease like that are not usually accepted by toxicologists as proof of causes of death by poison alone.

Q. Well, my question was, if there was anything in that case that warranted you in making the broad statement to adverse counsel that theocin was not responsible for the death?

A. I didn't say that; I stated that I didn't accept it as the cause in that case.

Q. You just merely mean to say you do not accept that as an authority in this case as respects caffeine?

A. I did not accept it as sufficient proof.

Q. You state also that you are not a medical man?

A. Well, I am a graduate in medicine.

Q. But I understood you to say you would not attempt

to deal with the medical phases of that case, and hence you would not answer me as to whether or not edema might cause those results?

A. I don't know what edema might do.

Q. When you first began taking caffeine you didn't take five to eight grains per day?

A. That has been so far back that I don't remember.

Q. Then you don't remember what you took?

A. I know what I am taking now.

Q. Well, you don't know whether you have built up a tolerance for it in the proportion you take it, or not?

A. I don't know; I can't tell whether I have or not.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Doctor, these were cases reported by Doctor Kobert which you included in your work on toxicology; do they state or show that they were cases of deaths resulting from caffeine?

A. No, sir.

Q. Do they, in any case, show the amount of caffeine that was taken?

A. No, sir.

Q. Do they, in any case, show the nature of the result that followed?

A. No, sir.

Q. You say personally that you do not know anything about the facts of these two cases?

A. No, sir.

Q. You were asked also about Doctor Hare's work and read some quotations from it. Does that work of Doctor Hare's treat of the effects of caffeine as a medicine?

A. Yes, sir.

Q. And when taken by sick persons?

A. Yes, sir.

Q. Does the effect of caffeine or any other substance on a sick person necessarily show what its effect would be on a well person?

A. No.

Mr. Miller: Now, I object to that; he declined to answer me on the grounds that he was not sufficiently versed in medicine to do that.

The Court: Well, I think the exception is well taken.

Mr. Sizer: Even though he is not a practitioner of medicine, he might be able to say whether the effects of a substance on a well person would be the same as on a sick person.

The Court: I think if he declined to answer as to the

effects of the disease—I will not allow it.

BY MR. SIZER:

Q. You say, Doctor, that the effects of different toxic substances may be different on different people. Is it or not true also that the effect of a substance on different people may differ?

A. Yes, sir.

Q. Do you know whether caffeine, in its passage through the body, is ever broken down or reduced into theocin?

A. No, sir; I don't know—not in theocin, no.

The Court: It is not disputed that is an artificial compound—nobody claims it is in that form,—

BY MR SIZER:

Q. (Interrupting.) I will ask you further, assuming that theocin—that caffeine could be broken down into theocin or any other smaller or less methylated substance, would the effect of that substance, when it is derived from the breaking up of caffeine in the body, be the same on the body—be the same as if it were taken into the mouth as such?

A. No.

Q. Now, why is that, Doctor? Explain.

A. Because it is produced in small quantities and gradually added to the circulation. If it is taken by mouth it enters the circulation very rapidly.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. About these cases that you reported. Do I understand in your last examination that you did or did not read those thirteen cases?

A. I don't know whether I did or not; I don't know whether those are included among the cases or not that I read.

Mr. Miller: I desire to introduce into evidence this page of the book dealing with poisoning, including that list of cases, to put it in evidence without taking the time to read it, as Exhibit "C" to his deposition.

The Court: That may be done. You mean the cases referred to under the head of caffeine poisoning in his book?

Mr. Miller: That is it.

Mr. Sizer: That will be all right.

(Witness excused.)

Exhibit "C" to the testimony of R. A. Witthaus.

STATISTICS OF POISONING.

Statistics of cases of poisoning can at best be but fragmentary and incomplete, as in all countries the great majority of non-fatal, accidental and medicinal poisonings escape record entirely, while in such records of vital statistics as are officially kept, particularly in the United States, either the nature of the poison is not determined with sufficient accuracy, or all cases are classed under the general head of poisoning. Confessedly such records take notice only of fatal cases. The legal reports refer only to the very small fraction of cases in which conviction of criminal poisoning is followed by appeal.

	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1880-1889
Poisonous foods	16	12	15	15	27	11	26	32	25	21	200
Bromin & Compounds	4	2	2	2	3	2	1	3	1	4	24
Potassium iodid	4	1	2	1	3	4	7	4	2	3	31
Cantharidin	4	4	3	--	2	1	1	2	1	1	19
Rhus Toxicodendron	--	2	2	4	--	2	4	5	1	3	23
Iodoform	2	2	20	11	5	4	11	9	2	10	76
Phenol	25	28	17	24	20	13	16	15	11	10	179
Lead	21	23	26	32	27	36	20	31	27	30	273
Mercury	6	3	9	6	38	28	14	17	21	23	165
Arsenic	32	19	16	17	25	11	12	18	15	26	191
Tobacco	1	1	--	4	9	5	2	4	5	3	34
Santonin	2	--	3	--	3	--	1	2	2	3	16
Soda and Salicylic acid	1	--	2	3	5	2	4	2	2	2	23
Quinin, etc.	3	2	--	1	8	4	--	2	8	6	34
Caffeine	--	--	--	2	1	2	3	--	1	4	13
Camphor	1	2	1	3	1	4	1	3	1	1	18
Cannabis indica	1	--	--	3	7	4	3	4	--	--	22
Hyosin, etc.	1	--	2	2	5	1	1	1	1	6	20
Straminium	3	5	4	6	--	4	3	1	4	1	31
Aconitin	9	2	12	7	4	5	3	5	5	3	55
Atropin	8	23	12	12	16	17	14	11	10	8	131
Strychnine	17	15	9	13	19	9	6	7	7	14	116
Chloral hydrate	9	2	5	7	8	2	1	5	2	1	42
Alcohol	10	3	4	17	3	9	9	16	18	26	115
Cocain	--	--	--	--	5	11	24	23	28	23	114
Opium	12	22	21	17	14	17	13	9	11	12	148
Morphine	11	11	21	27	27	18	17	25	10	17	184

H. C. WOOD, JR.,

the next witness called on behalf of the Claimant and Intervenor, the Coca Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,

BY MR. SIZER:

Q. Where do you live and what is your occupation?

A. I live in Philadelphia and am Professor of Pharmacology and Therapeutics in the Medical Chirurgical College of Philadelphia.

Q. Will you please state your education, qualification and experience as a pharmacologist?

A. I graduated in the University of Pennsylvania in medicine and studied in Europe under Professor Kronecker at the University of Berlin. I studied in Paris under Professor Richet, and in Turin under Professor Mosso. After my studies in Europe, I was appointed teacher of Pharma-dynamics in the University of Pennsylvania, with which institution I was connected continually until my election as a Professor in the Medical Chirurgical College. I have written a number of articles on pharmacological subjects. I am one of the editors of the United States Dispensatory. I am second vice-president of the Committee of Revision of the United States Pharmacopœia, and have revised the last three editions of the text book on therapeutics originally written by my father.

Q. Have you made any experiments to determine the exact effect of caffeine on the muscles, and if so, what were those experiments?

A. I made a series of experiments on the effects of caffeine upon the muscles of a frog, which animal is usually employed for studying the action of caffeine upon the muscles. These experiments were made by dissecting out two muscles from the hind legs of the frog, one muscle being poisoned by caffeine and the other not. The muscles were attached to a lever which was weighed—

The Court: I excluded the experiments of the Government along that line after the direct action of caffeine on the muscle—

The Witness: Well, your Honor, I would like to say—

The Court: (Interrupting.) Just a moment—I will exclude this, or, if I admit it for one side, I will allow the Government to prove their experiments.

Mr. Miller: I have no objection to it being admitted.

The Court: I prefer to exclude it on both sides, as I think it is so remote to the question of caffeine taken through the mouth in food.

The Witness: There were some other experiments I made.

Mr. Sizer: The Judge excludes these—we will get to the others.

BY MR. SIZER:

Q. Have you made any other experiments besides those by direct application to the muscle?

A. Yes, sir; I made experiments by hypodermically in-

jecting caffeine into frogs.

Q. And by "hypodermically" you mean directly into the blood system or into the lymph sac?

A. Into the lymph sac.

Q. Well, just state about those.

A. The experiments were performed by tying one leg so that the caffeine could not reach the muscle on that side, and then the caffeine was injected, and after waiting a sufficient time for the action of the caffeine to show itself, those two muscles were taken and the two muscles were dissected out with their attached nerves and attached to a muscle lever and the electric current applied to the nerves at intervals of every second, and the results of the contraction reported on a moving drum.

Q. Now, what was the result that you reached?

A. Well, the muscle which had received the caffeine, in that muscle the contractions were larger and more noticeable than in the normal muscle.

Q. What conclusion did you draw from that?

A. I came to the conclusion that caffeine increased the working capacity of the muscle with a normal expenditure of energy, with probably a less expenditure of energy, because when the experiment was continued over a long period of time and the muscles became exhausted, I found the total amount of work that the muscle was capable of accomplishing was greater under caffeine than under normal conditions. I have here a chart which shows the average result—of the ten experiments of this kind. Can you see it if I hold it up? This chart—the red line represents the caffeine and the green line represents the contraction by the normal muscle. You see at the beginning of the experiment the affeine muscle reached to a higher point than the normal point. That was continued for a long period of time until it became exhausted, the two muscles became exhausted at the same time and because the caffeine has done much more work—taking the total amount of work accomplished by the caffeine muscle being increased, therefore the muscle must have done this work more economically, because, as I may say, under the conditions of these experiments, the muscle being separated from the body received no nutrition, and therefore they worked on stored energy and the stored energy in the two muscles must be the same, and therefore the caffeine muscle accomplished greater work with the same amount of energy.

Q. Have you performed any experiments on that same line, Doctor Wood, on yourself?

A. On myself?

Q. Yes.

A. To ascertain the action of a drug on the muscle?

Q. Well, no, but to determine the nature of the stimulation of caffeine?

A. Not on the muscular system, but on the circulatory.

Q. State what that experiment was.

A. Well, I performed a number of experiments on different individuals concerning the action of the drug on the circulatory system, myself included among them. I found that under the influence of caffeine, there was a slowing of the heart with generally no great alteration in the blood pressure, that is in the force of the circulation, but in one person who never used any form of a caffeine beverage, I found an increase in the blood pressure, that is in the increase of force of circulation with a slowing of the pulse.

Q. What would that indicate, Doctor?

A. That would indicate that the muscles were working more economically, because the slower the heart works, the more advantageous the work. It can accomplish the same amount of work with less expenditure of energy by contracting slowly than by contracting rapidly, and the effect of the blood pressure was not lowered, so there was no weakening of the heart's force.

Q. It showed the force was the same with less expenditure of energy?

A. Yes, sir.

Mr. Sizer: You may cross-examine him.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Doctor, is this work, entitled Therapeutics and Its Principles and Practice, (Wood.) fourth edition of the book, that you referred to as having had some connection with in revising?

A. Yes, sir.

Q. That is Horation C. Wood, Junior, M. D.?

A. Yes, sir.

Q. And in that you state this:

"The question seems established that in frogs caffeine acts as a motor spinal stimulation, but also as a muscle poison."

A. Yes, sir, but the word "poison" is used in a technical sense there.

Q. Well, what is the difference?

A. When applied to pharmacology, any drug that has an effect on the system is a poison — that is not using the word in the ordinary meaning.

Q. Did you also state on another page, namely, that on

page 216, speaking of caffeine and its summary:

"It is a powerful muscle poison, at first producing a condition in which there is exaggerated excitability with a tendency to tetanic contractions upon momentary stimulation and afterwards a stage of stiffness, weakness, and finally lost excitability."

A. I would like to remark, Mr. Miller, that that statement was based upon experiments which were made some fifteen or eighteen years ago, and as a result of my own experiments and more recent investigation, I am inclined to retract that statement.

Q. Then you are not going to say your book was wrong?

A. I certainly am.

Q. This book was published in 1908, when did you change your opinion about this, when you were getting ready to try this case or appear in this case as a witness, or how long since 1908?

A. Well, if you had read the book carefully, you would have seen that statement is contradicted within the text book itself.

Q. And you mean to say you wrote a book that contradicts itself and sent it out to the medical profession?

A. In revising a book, it is often very easy to overlook statements which are contradictory —

Q. You think that you overlooked some of those statements when you were preparing this book?

A. I have no doubt I did.

Q. And that is the explanation you make of how you came to use this language?

A. Yes, sir.

Q. Now, in speaking of the diuretic action of this drug, which is its action on the kidneys, I find this statement.

"In poisoning by caffeine, great increase in the secretion of the urine is a common symptom, and the statement of Cubler that the alkaloid is one of our most powerful and certain diuretics, has received abundant confirmation."

You agree with that?

A. Yes, sir; I do.

Q. "The effect of the drug upon a healthy man would indicate that it does not act simply by regulating the circulation of the kidney, but has also a distinct effect on the renal organ itself."

A. By renal organ, you mean the kidney itself, and the blood vessels, —

Q. (Interrupting.) I said:

"The effect is not only on regulating the flow of the urine, but it acts directly on the organ itself."

That is what you mean by that statement —

A. I didn't catch the question.

Q. I say you mean by that statement that the administration of caffeine does not only regulate or help to regulate the flow of the urine but it has a direct effect upon the kidney itself, the organ or the blood vessel as you expressed it, the renal organ?

A. Well, your question makes no sense, Mr. Miller.

Q. I thank you, sir. Your answer is perhaps open to the same criticism. The effects of the drug upon a healthy man would indicate that it does not act simply by regulating the circulation of the kidney, but has also a distinct effect upon the renal organ itself. Now, what is that distinct effect upon the renal organ you referred to?

A. That is a matter of some dispute among pharmacologists at this time.

Q. Well, what did you mean by that?

A. That is has an effect upon the epithelium of the kidney.

Q. Well, you state it was not a limited but it had a direct effect on the kidney; what did you mean by that?

A. Well, it — I said an effect on the epithelium of the kidney —

Q. What is that effect, the direct effect?

A. In the sense it is used there, it is to stimulate that epithelium to greater activity so that a larger quantity of urine is secreted.

Q. And do you mean to say that is good for a healthy man?

A. Well, I think it is a matter of neither good or bad in a healthy man, it makes very little difference.

Q. And you mean to say that the normal condition of a healthy man, you mean changing the normal condition of a healthy man so as to increase the flow of urine is neither good or bad?

A. If I take it — if I took a large quantity of water I would increase the flow of urine, but it don't injure my system any.

Q. But if you take a drug, and if you do not take the beverage that nature has furnished us, would it be a good or a bad thing.

A. I would say that a drug that is not taken in excessive quantity has but very little influence on the system, so far as general health is concerned.

Q. I find this statement on page 214 of your book:

> "In the advanced stages of caffeine poisoning, the heart and the vaso-motor system are without doubt depressed so that the fall of pressure is duplex."

That is double. Do you agree to that statement?

A. Yes, sir.

Q. I find a further statement:

"Experimental evidence, although it is not conclusive, does not point towards any marked effect of the drug upon metabolism."

Do you agree to that statement or not?

A. Yes, sir.

Q. How was this caffeine, I mean what was the substance that you administered to the frogs, was that caffeine or caffeine citrate or what?

A. Caffeine.

Q. How did you prove that?

A. I obtained caffeine from one of the largest wholesale dealers in Philadelphia, guaranteed under the Pure Food & Drugs Act.

Q. Guaranteed under that, or merely a mark by the manufacturer's serial number, that didn't mean the drug laboratory of the United States guaranteed it.

A. That meant the manufacturer guaranteed it.

The Court: You need not answer that.

BY MR. MILLER:

Q. It meant the manufacturer guaranteed it was so and so?

A. Yes, sir.

Q. And you made no test to ascertain whether it was caffeine or not?

A. No test to absolutely prove it.

Q. Now, when you injected it into the lymph sac of the frog, after that time, you extracted, as I understand, after a certain length of time, the muscles of the frog?

A. Yes, sir.

Q. How long after you put it into the lymph sac?

A. Generally about half an hour.

Q. And you thought that the effect of caffeine would be found on the muscles of the animal within thirty minutes if it was injected into the lymph sac?

A. Why, I proved it.

Q. You proved that by showing that one of these muscles was much more active than the other?

A. Yes, sir.

Q. What would have been the difference in effect between the taking of it into the lymph sac the way you did and applying it directly to the muscle?

A. I don't think there would be any.

Q. That is your opinion?

A. That is, of course, provided that the doses were

equivalent.

Q. Did you consider that leg — that you found a normal leg, that is the one you tied off?

A. For the purposes of experiment, it was.

Q. You cut off the circulation absolutely from that leg?

A. Yes, sir.

Q. And so that the caffeine which you had injected into the frog into the lymph sac could not get into the circulation and get into that leg at all?

A. Yes, sir.

Q. And then you took the other leg, that you knew it could all go into, and therefore you considered that a fair experiment?

A. I certainly did.

Q. You took one leg and cut off the circulation entirely, shut off the blood, and then you also let the circulation get into the other leg, and let all the caffeine go there?

A. That type of experiment has been used from time immemorial, and all the scientific world agrees it is a fair experiment.

Q. You say that is a fair experiment?

A. Yes, sir.

Q. Well, you are also the gentleman whose name appears on this United States Dispensatory that you referred to in chief?

A. Not on the back. My name appears on the title page.

Q. And in compiling that, I find the word "coca" and I find this definition:

The Court: (Interrupting.) That has already been read.

Mr. Miller: I don't think I have read it.

Mr. Sizer: That was offered in evidence by Doctor Fuller, I think.

Mr. Miller: We put in the National Dispensatory, this is the United States Dispensatory and we proved by that witness he compiled it — they proved that.

The Court: That is not the point of my examination — if it is already in, you need not go over it again.

Mr. Hirsch: There are two dispensatories, and one is in and one is not.

Mr. Miller: I don't think this one has been put in.

The Court: All right, go ahead.

BY MR. MILLER:

Q. The definition given here of coca is:

"Dried leaves of Erythroxylon Coca." Is that right?

A. That is the name from the United States Pharmacopœia.

Q. You approved it or you would not have put it in here?

A. No, sir; the United States Pharmacopœia is copied verbatim throughout that book without any approval or disapproval.

Q. Then you didn't have much to do except to copy the United States Pharmacopœia?

A. That book is a commentary on the United States Pharmacopœia, it copies what the United States Pharmacopœia says and then expresses comments on the Pharmacopœia.

Q. Now, in this book do you state that it is taken from the United States Pharmacopœia:

> "Huanaco Coca has been for a long time believed to be obtained from Erythroxylon Coca. This belief is confirmed by Rusby."

By that, you refer to Professor Rusby, who has been examined here?

A. I presume so.

Q. You didn't get that from the United States Pharmacopœia?

A. No, sir, I did not write that whole book. That book is edited by three editors, one of whom is responsible for the chemistry, and one of whom is responsible for the pharmacy, and one of whom is responsible for the therapeutics. I am in no way responsible for the pharmacy or the chemistry of the book.

Q. Well, this is the botanical portion of it. If you were not responsible for the other two, are you responsible for that part?

A. My father wrote that part.

Q. What did you have to do with this book that you put in evidence, if somebody else did everything about it — what did you do?

A. I assisted in reading the proof and in correcting any statement which I found in there which I did not think was correct.

Q. If you were proof reader and corrected any statement that you did not think was correct, then you thought this was correct or you would have offered a suggestion about it?

A. Yes, sir.

The Court: What is the bearing of that statement — I don't see it.

Mr. Miller: It is to show what coca is, assigned to be and what is the popularly accepted definition of coca.

The Court: I understand the first part of it, but about the different brands, the different varieties of coca?

Mr. Miller: I understood your Honor to rule the other day that one witness had a right to express his opinion as to the attainment of another, and I was trying to show that the compilers of this book, including this gentleman, had expressed a high opinion of Professor Rusby, because they had quoted from him.

The Court: You may ask one person whether another expert is a competent authority, but I don't care to go into the question of whether they are eminent or not, those degrees.

Mr. Sizer: And I further object —

The Court (Interrupting): I do not exclude the definition of coca read, but about Doctor Rusby, I do.

Mr. Sizer: So far as the definition of coca, the witness says that is copied from the United States Pharmacopœia, which is already in evidence.

The Court: I will allow it to stay in.

Mr. Miller: My idea, to get it on record is this: if he read the proof of this work and they were quoted from another author that is the highest commendation he could give the other author, and then I might argue inferentially —

The Court: That is too irrelevant and too long a roundabout way. If you want to ask him directly if Rusby is qualified, you can do so.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Are you familiar with the appearance of pure caffeine?

A. Yes, sir.

Q. This substance that you used in the experiments which you purchased in the market, did it look like caffeine?

Q. Did you have any reason to suspect it was not?

A. No, sir.

Q. This statement that Mr. Miller quoted to you with respect to the muscle poisoning effect of caffeine, was that based on experiments made by the direct application of caffeine to the muscle?

A. I would not like to answer that question positively because it has been some years since I read that literature, but I am inclined to believe it was.

Q. Can you recall how long ago it was since you made those experiments?

A. If you mean made my own experiments—they were based on the literature.

Q. Do you know what quantity of caffeine it was that

was used in making the experiments on which that statement is based?

A. As I said before, I cannot state positively because it has been so long since I have read that article that I have forgotten the quantity.

Q. So that statement was based on experiments made by others that you didn't know anything about?

A. Yes, sir.

Mr. Miller: I object to that.

The Court: That was matter in chief that you introduced on cross-examination.

Mr. Miller: I don't object to the substance but to the form.

The Court: He has a right to cross-examine on matters that you introduced as matters in chief. On direct examination the witness was not asked about that at all.

Mr. Miller: He was asked if he wrote that book.

The Court: He was not asked about whether caffeine acted as a poison on the muscles or not. That was brought out as original matter—on your part in cross-examination, and they have a right to cross-examine on that matter.

BY MR. SIZER:

Q. Since you wrote that book, you have made experiments that lead you to form a different conclusion?

A. Yes, sir.

Q. Is it not since that book was written — is it not a fact that you have made experiments which have led you to different conclusions than the one expressed in the book?

A. There is no doubt, both from my own experiment and reading of the literature, that the action of caffeine in small and large doses is essentially different upon the muscles.

The Court: The ordinary rule in the Federal Court is that where the witness is examined on one subject in chief, the other side cannot examine him on any matters except what he was asked about in chief. That rule has not been enforced in this case as to either side. Either side has been allowed to cross-examine about matters that were not asked about in chief, but in allowing that to be done, I think when the cross-examiner goes into new matter, that then the witness becomes his witness and the side introducing him has the right to cross-examine on that new matter. That is the way I am ruling, and I shall adhere to that ruling.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. The experiments on which you base your change of

opinion were given in evidence by you in your examination in chief, were they not?

A. I have not altogether changed my opinion. It is the opinion I have held for many years, but the opinion you take out of the book is taken by separating a sentence from the context.

Q. We will see if that is so.

A. I have always said that caffeine in small doses was a stimulant to the muscles.

Q. I read you from the summary that you compiled there, and do you find anything that disputes the statement that it is a powerful muscular poison?

A. This summary is supposed to be read in connection with the text of the book.

Q. But the summary is the result of your conclusions from the text?

A. I think the whole article on the subject of caffeine is a part of the text.

Q. What is the reason for writing a summary if you thought the whole article was to be taken into consideration and putting it in that black type?

A. For the student when he wanted to refresh his mind, having read the article previously, that would be recalled to him.

Q. You did not intend to create any false impression by putting that summary there in bold black type as distinguished from the remainder of the text?

A. If the student had read the text book, he would have seen the statements to which that summary refers, and he would have remembered that it said in the text of the book that caffeine in small doses is a stimulant to the muscle.

Q. That is what you say there, that is first acts as a stimulant and then finally becomes a depressant — that is exactly what you say in the summary.

A. I do not catch that.

Q. I say, the conclusion that you draw in the summary is, that first caffeine acts as a stimulant and finally as a depressant?

A. If given in large enough doses, it would act as a depressant.

Q. You don't say that in the summary?

A. I say it in the text of the book.

(Witness excused.)

H. L. HOLLINGWORTH,

the next witness called on behalf of the Claimant and Intervenor, The Coca Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?

A. Harry L. Hollingworth.

Q. What is your present position?

A. Director and experimenter in psychology in Columbia University; also director of psychology in Barnard College.

Q. How long have you been engaged in that capacity?

A. The last two years.

Q. Where were you educated?

A. I took my A.B. degree at the University of Nebraska and served there two and a half years as assistant in psychology and then came to Columbia University as assistant in psychology in charge of advanced laboratory work, and took my degree of Ph. D. and was appointed to my present position.

Q. Have you made any experiments to determine the effect of caffeine on the mental and motor processes, and if so, will you describe the experiments?

A. The object of my experiment was to determine the effect of caffeine alkaloid in the first place, and in the second place Coca Cola syrup with and without caffeine on the mental and motor processes. I had in these experiments sixteen people under my observation for thirty-five days. These people were working on full time and I performed experiments with them. During the first four weeks they came to me five times a day and I put them through mental and motor tests which occupied one hour each day, kept them one hour at each time so that I worked with them five hours each day. During the next part of the experiment, which occupied three days, the subjects or patients—I call them subjects — came to me and worked for ten successive hours on each of those three days, going through these mental tests continuously. In the following week they came to me and took instead of caffeine, Coca Cola syrup with and without caffeine. These people throughout the experiment went without any caffeine-containing drink. They abstained absolutely from the use of coffee, tea, chocolate and cocoa as well as from the use of nicotine and all alcoholic drinks, and all soda fountain drinks, specifically Coca Cola. They further observed regular hours of eating and sleeping, and during the three days during which I practiced the second part of the experiment, they all ate at the same table, eating absolutely the same things for the three days.

Q. Describe your squad and state how you gave them the doses with and without caffeine.

A. In the first experiment, lasting four weeks, I had four squads. I used these four squads—perhaps I had better first say how I gave the doses. I used pure caffeine, alkaloid, administered in capsule form of doses from one to six grains, given in a single dose, but as psyschological experimentation is beset with many difficulties which have to be guarded against, I did this: One of the difficulties is that if the individual knows what he is taking, whisky or caffeine or what not, the excitement of taking is likely to have an effect. These people were told some days that they would have sugar of milk and some days caffeine and they didn't really know what they were taking.

One squad went through two weeks taking nothing but sugar of milk although they didn't know what they were taking.

Another squad went through four weeks taking sugar of milk three days and then caffeine three days and then sugar of milk three days and then caffeine three days and so on.

Another squad ran through a month taking caffeine with their lunch at one o'clock, and a fourth squad taking caffeine in the middle of the afternoon on an empty stomach about two and a half hours after the meal.

I had three controls. The first week I ran everybody on sugar of milk so as to get a normal result. Then I ran a squad throughout three weeks on nothing but sugar of milk and then I had sugar days and caffeine days for every individual in every squad.

Q. Tell us the character of the people you tested.

A. My patients consisted of ten men and six women, ranging in age from nineteen to thirty-nine. They were people engaged in mental work, they were students and the wives of graduated students. Some of them had been accustomed to drinking coffee and some had never taken coffee or tea. They all went without coffee and tea for three days before the first week began; that is, ten days before I began to give any of them caffeine.

Q. Tell us what your tests were and if you have any apparatus please exhibit it and explain the significance of it.

A. I had nine tests, some of which were distinctly mental and some distinctly motor. Then in addition to this I had one person write on a typewriter throughout the month in order to show proficiency in such a complex performance as typewriting. I also got a record of the number of hours of sleep every night and quality of sleep, as to whether it was nearly as usual or better than usual or worse than usual. I have all the tests here and I think I could describe them better simply by showing what I did.

I have made over sixty-four thousand measurements and it would be impossible to present them all.

This chart constitutes between twelve and fifteen hundred deficiency curves and these are three of the experiments.

BY MR. MILLER:

Q. Did I understand you to say you were a doctor of medicine?

A. I am a doctor of philosophy.

Q. You are not a doctor of medicine?

A. No, sir.

Q. Not a medical practitioner?

A. No, sir.

Q. Go on.

A. In the first experiment, running through four weeks, I came to certain conclusions. I was not satisfied with their absolute validity because my tests were an hour apart and I could not state what had been done between those tests nor had I been able to trace the effects of the dose of caffeine beyond the 24 hours, and I then performed a three-days experiment in which they came at ten o'clock and I ran them for six hours and gave them a dose of caffeine and then traced the effect for 60 hours, following them continuously except when they went to bed.

My first test was designed to illustrate one of the most simple mental processes which is that of perception, simply looking at a thing and recognizing it and knowing what it is, recognizing that this is a book or this is a chair. I used in that sort of process what I call the color-naming test. I have a chart of one hundred pieces of paper, ten colors repeated ten times. My test was to have a man name the color—black, purple, pink, red, yellow, etc. I measured the time required to go through that test, distinctly recognizing the name of each color. That was a test simply of perception.

Closely related to that is the cancellation test. There are 1,000 numbers on this slip; the test is to go through there marking out all the threes or all the fives, as the case may be, so that a man must recognize a three as a three and mark it out. It is again a test of simple perception. The results of that test are shown in this chart. This is the color-naming test and the curve for the color-naming test is absolutely typical of many of the mental tests that I put the men through. These are actual curves taken from actual records from one of those days when they worked for ten hours. This green line represents the performance on the first day. The height of the line above the base indicates the quality. The higher the line the better the

work. As a man proceeds he falls down.

Q. Was that with or without caffeine?

A. First they took a dose of sugar of milk only on that day. You will notice that this green line shows certain irregularities due to normal variability. At about 2 P. M. they begin to fatigue and their curve drops rapidly or constantly until 10 P. M. This is normal here.

On the next day they came and started out as shown by the purple. They started at the same point and they began to fatigue just about as on the green day, and at that point I gave them caffeine and the line rises very clearly after the first hour and from that point on it is constantly higher throughout the day; that is, they were stimulated, they did better work, kept up better work until the end of the day.

They came the next day and I gave them only sugar of milk, to test if there was any secondary depression resulting. They started from the same point as on the other three days, showing absolutely no depression there, and then they followed along here, if anything, showing a little better than they were on any other of the other days; and then about 2 P. M. they fatigued, just as on the other days without caffeine, but they never dropped quite as low as on that first day. I had then traced the action of that dose for 54 hours, after taking it, and got very marked results of stimulation and absolutely no depressing results from it.

The next is the opposite test. Here I have a list of fifty words and the test is to go through that list of words and name a word that is the opposite to the word down there. Shallow, deep; innocent, guilty;—they must go through there and instead of the word there they must give the opposite. It is a more complicated process than the other. I ran that test throughout a month. I have not the complete curves for that process here, but the results absolutely agree with this other curve. This sort of curve could be given as typical for the opposite test. You got some more stimulation with absolutely no secondary results.

The Court: When you say "this sort of a curve," it does not show in the stenographer's notes.

The Witness: I mean this whole Chart No. 1.

A. (Continuing) The next test was still further complicated and it is a little harder, still a mental test. I have a card with a lot of numbers of two places running from 17, and the test is called the calculation test, and the calculation is to go through that list and add 17 to each of the numbers mentally without the aid of a lead pencil, and to call out the list as quick as possible. There are 100 in that list. The first month I used 50 and in the intensive experiments of ten hours a day I used 75, and on the ex-

periment with syrup I used 100, and the observer held the key and when the answer was wrong he said no and the man had to give the correct answer in every case, and he had to do the test properly, and always had to do the same amount. The calculation test shows more stimulation than any of the other mental tests, and I submit chart No. 1 as typical curve for the calculation test as it is for all the simple mental tests, although the results shown in the calculation tests are even greater than shown in the perception and the opposite tests. By giving caffeine I quickened them two-thirds, whereas it was 150, under three grains of caffeine it showed 100, so that the result was marked stimulation which characterized not only individuals but showed up in the squad averages.

Q. Was that followed by secondary depression?

A. In no case in any of my tests is there any secondary depression to be detected.

Now, the fatigue squads here simply give the results like the green and black lines. On that last three days the effects were not abnormal, they tired out the same; on the last three days, to be sure that the control squad was not abnormal, I gave them the caffeine and immediately they showed the same sort of performance that the other squad did.

Q. What kind of a performance?

A. Represented by the green and black lines.

Q. That is what I wanted to know; they were boosted up.

A. The next test was of slightly higher and more complicated mental processes, what is called the discrimination test, the test of judgment — no, since I have the chart on motor tests I will take them up next.

I had three motor tests, all of them are on this board. One is the steadiness test. Here are three holes; the test was to take a metal rod and, holding the arm out, to insert it in that hole without hitting the sides of the hole. Every time it hit the side of the hole the click was recorded automatically by an electrical marker. That determined the number of times the hand hit the sides. The second test was the tapping test, to let the arm rest on the elbow and make four hundred taps this way and the tap is recorded. That is purely a test of tapping. Four hundred taps had to be taken. We took the time for the first two hundred and the time for the last two hundred and the time for the total number.

The third test was the co-ordination test. Here are three holes and the tapping was done this way—and the test is to hit the hole, and when the rod goes in and hits

the bottom it rings a record on the apparatus only when it goes absolutely in the hole and strikes the bottom. The test was to ring up 100 records on that co-ordination test. For the steadiness test—I will take them up in turn and describe them. In the case of steadiness any kind of a dose produced unsteadiness. A dose of sugar of milk or water or syrup, with or without caffeine, produced unsteadiness. It is a very sensitive test. Anybody coming in the room would produce unsteadiness. The only difference between the pure caffeine and the other substance is that in the case of the other substances the unsteadiness passes away rapidly. The caffeine produced slight unsteadiness which is recorded in the unsteadiness test, and the unsteadiness persists for a greater time than the unsteadiness produced by other substances. In the tapping test there was clear stimulation. A man can keep up his initial speed longer and he reaches the 400 taps in quicker time. Here is a curve which is typical of the tapping performance and it is the actual curve produced. This one is the actual chart, No. 2. The first day is represented by the purple line and a man starts out tapping and it is registered up and down here, and as he goes on he shows an abnormal variation. Here I gave him caffeine and his curve rises for about two hours. He starts about half an hour after the dose and it lasts about two hours. That is the general result of the motor processes, stimulation comes quicker and don't last so long; but in the case of mental processes stimulation don't come so quickly but persists longer, sometimes for 24 hours. After that, from the stimulation the man falls down but he does not fall below his normal. Here is the normal that he started out with. He does not fall below that.

The next day he comes and he starts at the same point, going once a little below and once a little above, but averaging the same, going throughout the day showing only a tendency to drop as normal fatigue towards the end of the day and never making a record below that. That is a typical result of the caffeine test, transient stimulation with no subsequent depression at all.

I forgot to say what the result was—there were three tests in which I found no result at all; one was the cancellation test. I have been unable to detect any influence of caffeine of any kind on that cancellation test.

In the case of this co-ordination test, the result is this: When a man comes to it after having taken caffeine, he feels tremendously exhilarated, quite active, and he simply lunges at that, showing stimulation; but in this test stimulation is not particularly desirable. Feel-

ing exhilirated makes a man miss and sometimes he shows a slower record after caffeine than before, very clearly. This I state from my own observation of those 16 people, the result of this stimulation causing this change in that sort of test.

Now, I have next two other tests on discrimination and judgment. One is that which is represented by this which I call the discrimination reaction. I have back of this screen a little slide in which I can put a color; sometimes that color is red and sometimes blue. The moment a color appears and it can be distinguished and the key is pressed it cuts this pendulum off. This pendulum always swings at a certain rate, governed by the law of gravitation, and I have here this scale cut off in one one-thousandth of a second, so if that swings so far I can determine exactly how long it has taken. If it swung to this point that would be 350/1000ths of a second. I had it fixed so that my subject did not know what was going on behind this apparatus. Sometimes I put in a blue and sometimes I put in a red, and whenever the blue color came he was to press with his right hand and when the red came he was to press with his left hand. I had a buzzer so that I could tell whether he hit with the right hand or the left hand. So he had to judge just as quickly as possible the blue from the red, and when it pressed it stopped this pendulum; that was discrimination, judgment and evolution of one of the highest types. I measured that in thousandths of a second so that it is a very delicate test.

At each test I took ten trials and made a record of the time and took the average of the ten trials. I will show the result of that experiment. When there was no caffeine given, or sugar of lead, there is no change, there is not much fatigue in that sort of a process. The line runs fairly level as shown by that green line.

This chart is the actual chart typical of the performance of the discrimination test. The first day is represented by the purple and the red. You see, they start out always well in the morning. That is one thing that comes out clearly. The morning tests were the worst; they have to be warmed up to it. Then they start out here following this line at this point and I gave them here caffeine and the result is the same as the result in the co-ordination test. For a short time the reaction is slow for the simple reason they are stimulated and they sort of experiment, anticipate what color is coming and they make mistakes. I check the mistakes and then when they find they are making mistakes it slows them up and they put on brakes. In that sort of a test stimulation is not wanted. It slows them

down and then the curve rises to show quicker discrimination, quicker evolution, and they show better than the first day, and then still better than the day before. The green line is higher and continues higher until away down to seven o'clock the next day. That is, sometimes the stimulation in the mental processes lasts 24 hours or more. At that point the lines drop, showing normal fatigue. I was not satisfied with that and wanted to know what happened — what would happen the next day, and they came again and started on the black line a little better than the first day, showing absolutely no secondary depression, and following along here pursued very much the same sort of a curve as on the green day, showing slight fatigue at the end of the day and in no case coming up to the red line. That is the typical result of one of the discriminating reaction tests.

I had one other mental test and discrimination test, and that was the weight. Here are the materials with which I performed the weight test. I have not weighed these, they were sent to me by an assistant, but here is the large one and here are these smaller ones all the same size and appearance but different in weight, from 15 grams up to 80 or 90, so that there is quite a range. Now, the normal individual comes along and gives an example of illustration. He picks up this weight and he picks it up this way. Then he picks out one of these lighter weights which may be 25 or 20, or 55, and he thinks it is lighter, and there is an illusion, and the normal individual always gets that illusion without exception.

Now, my object was to know whether caffeine produced any change in that sort of judgment, whether it increased the man's susceptibility to illusion. A man picks up one of these weights, putting the lighter on one side and the heavier on the other, and the intermediate in the middle, and then he changes from the second or third one and it seems precisely the same as this big one; and the only result that came at all from that test throughout the whole month was that with all the people the illusion became greater; with the people who took sugar throughout the month the illusion was more; with the people who took caffeine throughout the month the illusion was more, and the caffeine didn't produce any more illusions than they got from the sugar, or the normal, at all.

Q. You say you performed some experiment on a typewriter, a typewriter test?

A. Yes, sir. The woman who performed that was a typewriter, fairly competent; that is, she knew how to typewrite by the touch method so much so that she showed

very slight improvement as the month went on showing that she was practically down to her level. She wrote from Ruskin's *Sesame and the Lillies;* she wrote three pages a day, and during the first month she did that seven times every day, so that she wrote 21 pages from the book as quickly as she could and her time was taken. Then I counted up her errors, I have not been able to complete that, but so far as I have been able to count there has been no difference in the number of errors nor any special difference nor substantial difference in the speed of the typewriting. Typewriting is one of those complex acts which seems to involve a great many mental processes and yet as I say, I saw no difference.

Q. Explain how much caffeine you used and the time you gave it to them.

A. I think I stated that. With one squad that took it three successive days, then three days of sugar of milk, then three days of caffeine, then three days of sugar of milk. The dose varied from one to six grains, giving them one grain on two occasions and two grains on two occasions, and three grains on two occasions, and four grains on two occasions, and then six on two occasions. It was simply given in the form of a gelatine capsule. As to the hours, the morning hour was from 10 to 12, and giving it at that time it gave no perceptible difference.

Another squad took it at meals, at one o'clock on alternate days. That shows less stimulation than when taken in the afternoon. It not only shows it is not only less but less in the afternoon than when taken with the meal. The fourth squad took it in the middle of the afternoon, in doses of one to six grains on an empty stomach, about two and a half hours after lunch. Those people took it in one dose all the day up to six grains of pure caffeine alkaliod. The other squad I have not described yet was people to whom only sugar of milk through the mouth was given and they took it at the same time that the squad took caffeine. There were four of them and of that four two of them took it with their meals and two in the middle of the afternoon.

Q. Does that chart represent the summary of the effects with and without caffeine?

A. This represents the seven days of caffeine on Coca Cola syrup and on syrup of Coca Cola which had no caffeine in it. I had twelve subjects in the experiments and they ran for the sixteen days and I tested them five times a day. On two of the days I gave them nothing at all. I called them blank days. I have taken as the normal for each day the first three performances of the day, 7:45,

10 and 12:10. Those were the three normal and I took the average of that. Then the two in the afternoon after taking the syrup about three o'clock and 5:30, and I calculated the ratio on that afternoon's work to the forenoon's work to see whether they got fatigued or stimlated. When that ratio is just 100 it means that the afternoon work is 100 per cent. of the forenoon's work and there is no difference. When the ratio is over 100, it means they are fatigued; when it is under 100 it means they are stimulated, that they could do it more quickly, so that these blank days represent the average—I have my five different mental tests here, the perception tests, the opposites test, naming the color, the tapping and the discrimination. I left out the cancellation and the size, weights and the three-hole tests because the motor test had to be done in the same room that all the other squads were waiting for and it took so long, so that by dropping out the co-ordination test and the discrimination test I was able to try them all at the same time. The co-ordination test would show the same as the discrimination. For the blank days each of those figures is the result of three people, and in every case there was fatigue, 2.7, etc., an average of three per cent. Now, on two other days I gave them Coca Cola syrup and changed the caffeine content but in every other respect it was identical with the Coca Cola except it had no caffeine in it. On one day I gave one glass, one ounce of syrup with carbonated water, just as ordinarily served at the fountain; and on another day three glasses. When they took one glass they took it at 3:10; when they took three glasses they took one and a half glasses or an ounce and a half at 3:10 and one and a half at 5:30. Then we had fifteen minutes before starting the test. So that this again is an average of 24, twelve people two successive days. Giving the Coca Cola syrup I gave them one day one glass, used all the people of the same squad. On another day three glasses and on another day five glasses. When I say "glasses" I mean ounces of syrup taken with carbonated water. As a matter of fact when I gave them five glasses I did not give them five glasses of carbonated water; I gave them three in a little over an ounce and a half of water in the glass filled with carbonated water so that they had only three glasses of carbonated water with that.

Q. Were those doses all at one time?

A. No, sir; when I gave them three glasses of Coca Cola they were taken at 3:10 and 5:30. When I gave them five glasses the first glass was given immediately after 1

o'clock, the second was at 3:10, and the third was shortly before 5:30, so that all three glasses of Coca Cola were taken within a period of about four hours in the afternoon.

Now, the result shown on this chart is the average test and then the average of the whole. Now, there seemed to be a certain amount of stimulation in every test; a little better on the syrup than on the blank days. That is 100; that is, they didn't get any stimulation from the morning's performance nor in fatigue. They are balanced. When you come to the Coca Cola syrup, you get a less average than on the syrup day, so that there is stimulation. There is an average of 98.9 comparing with the blank days, which means a stimulation between .4 and .5 of one per cent. in that individual's performance, and the difference between the 100 and the 98.9 is due presumably to the caffeine product. I have shown in my previous chart that there is no secondary depression following.

Q. Did you make any test showing caffeine on the quality and amount of sleep?

A. I did. On every morning after my subjects returned to the laboratory for the day's test, I made a record of the approximate hours of sleep they had had during the night, and a description of that sleep, characterized as "Good as usual"—"Better than usual," or "Worse than usual," and I have compiled statistics for that month, and also for the subsequent week, of the syrup. One represents "Sleep better than usual," 2, "Ordinary sleep," as good as usual, and No. 3, "Sleep worse than usual." And I have averaged the result for each of those sixteen people, for the 28 days in the first month, and I have distinguished between the first week of the experiment in which I gave everybody sugar, nobody caffeine. I have taken the average for this and also separated the days on which everybody took sugar and calculated those days and separated the days where they took one or two grains, or three or four grains, or six grains, of pure caffeine alkaloid, so that when this number is less than 2.00, that means "Sleep better than usual." When it is just 2, it means "Sleep as usual," and when it is going toward 3.00, "Worse than usual." It would actually have to be 3.00 to get worse than usual, but we never get quite to that. Some people might show a tendency to be worse than usual, and anything above 2.00 is a tendency to worse than usual.

Q. Now, what was given the four squads?

A. One squad sugar throughout the month; another squad sugar and caffeine alternately; another squad caffeine with their morning meal, and another squad caffeine in the middle of the afternoon. Now, take these lines one

at a time: This squad went on sugar and you get variability here even when they take nothing but sugar. Sometimes it is 1.87 and sometimes 2.06; sometimes better than usual, sometimes worse, taking the people who took nothing but sugar. Then here take the three days of sugar and three days of caffeine, and you get for the first week when they had only sugar, 2.13; and here it is 2.7 and here where they took one or two grains in one since dose, 2.16; and when they took three or four grains, 2.20, which is not appreciably greater than 2.13.

Mr. Miller: I wish you would tell the results.

A. (Continuing) The variability of this curve of figures is considerably less than the variability of this line of figures which represents the squad which did not take any caffeine at all, but only sugar. The range here is from 1.81 to 2.06, over .30. The range here is even less than the range of variability in that line. Taking caffeine with the meals for the first week, 2.13, and for the sugar it is 2.20, for the one and two grain doses. There is an apparent tendency to impairment in the quality of sleep, it seems that way, but when you go to the three and four grains, absolutely better than usual, and tremendously better than the first week before.

Mr. Miller: I object to that characterization.

The Court: The objection is sustained.

The Witness: Can I compare the figures?

The Court: Yes.

A. (Continuing) 1.92, which represents a higher value than 2.13, which is the average for the first week, and also a higher value than 2.20, which represents the sugar days and for the six-grain doses a value of 2.17 which is better than on the sugar days throughout the month, and very slightly larger than the first week before the experiment.

The average for the six-grain doses is 2.17—that is what I just talked about, — the average for all the caffeine days, one to six grains, is 2.14, which is slightly higher value than for the sugar days and only 1/100th poorer than on the first week before the experiment. These are the people who took it with their meals.

Now, the people who took it in the afternoon, their average the first week is exactly 2.00, the same as usual. On the sugar days a little better. The one and two grain days again 2.00, and on the three and four again 2.1. Again, the variability of this row of figures is much more uniform than the variability in the amount of sleep with only the sugar squad. Only when you get to the six grains does it go up. Here is the six grains of pure caffeine alkaloid taken at one dose at one time in the afternoon, and there is

no doubt that that amount of caffeine taken in its pure form disturbs sleep.

Q. What other experiment did you make in regard to the effects of caffeine that you call the intensive?

A. By the intensive experiment I mean those three days in which I had my people come and work for ten successive hours and I have already given the curve showing the results of this experiment and they conform absolutely to the other. I have another statement concerning sleep. This is the sleep record taken the week when instead of caffeine I used Coca Cola syrup and syrup without caffeine, and on two days gave no dose at all. I put the whole twelve in one squad and there were two days of this kind when I gave no dose at all.

The Court: What was that dose of syrup?

The Witness: On one occasion one ounce, on another three ounces of Coca Cola syrup, except that there was no caffeine in it.

The Court: What was the dose of Coca Cola?

The Witness: One glass, one ounce, and three ounces and five ounces of the Coca Cola syrup with caffeine. I had both kinds.

The Court: Just pure Coca Cola syrup?

The Witness: With carbonated water. I served the syrup on the syrup days with carbonated water just as I did the Coca Cola.

The Court: When you say one glass, that means a glass containing one ounce of Coca Cola syrup and the remainder of the glass filled with carbonated water?

The Witness: That means the amount of syrup required to come up to that mark which was found on the Coca Cola glass. I have never tested the amount; I call it one ounce, and one glass means that much syrup along with the rest of the glass filled with carbonated water. Here I show the kind, and here the quality of sleep. Under 2.00 is better than usual and over 2.00 is worse than usual. On the days on which no dose was taken, the average quantity was 1.79, somewhat better than usual. On the days on which they took only syrup, I have the average here of the twelve people, also the average result of one ounce, and three ounces of syrup, 2.08.

Now, in the Coca Cola I have separated the one and the three and the five glass doses and with one glass of Coca Cola the average was 1.80 as compared with 1.79 when they had no dose, and the two values are identical. As to the three glasses of Coca Cola, the average is 2.09, an identical value with 2.08, which was the average for the syrup days. Only when we come to the five glasses, the

five ounces of Coca Cola taken within a period of four or four and a half hours in the afternoon, does the figure rise above the syrup days, two and a half.

That value is very closely like the 2.51 which I got here from the six grains of caffeine alkaloid.

Q. Did you find any difference between the effects of Coca Cola, taken as it is made, and the effects of caffeine.

A. The effects of caffeine taken with Coca Cola are very similar to the effects of caffeine taken with meals —the stimulation.

Mr. Miller: I object to that in so far as it deals with the physiological action of the drug.

Mr. Hirsch: I will restrict it then.

The Witness: I am referring to the performance of these mental tests.

The action of caffeine taken with Coca Cola syrup, as I stated, is very similar to the action taken with meals; its action is reduced in degree and somewhat retarded in time.

Q. Now, doctor, from all of your experiments will you please give us a summary of your conclusions as to what the effects of caffeine is by itself taken with meals and with Coca Cola syrup.

Mr. Miller: You mean the physiological effect.

Mr. Hirsch: Yes.

The Witness: I conclude that the use up to 6 grains of the pure caffeine alkaloid, the influence of caffeine on the mental processes depends somewhat on the type of the process involved, and has more or less effect on the mental processes, the processes of reasoning, memory, perception and direct thinking caffeine accellerates and has a mild stimulating effect, which would give in the quantity as it does, in the case of the motor processes, seems to persist for some time, I have found it persisting for 24 hours. I am not prepared to state whether that is actually due to the presence of caffeine, or whether the organism has profited by being steamed up on the same day and still profits thereafter.

Q. How long did you watch the subject to find out whether any re-action or depression?

A. In the case of the intensive days I began at ten o'clock on one day, the third of the month, I gave the dose at 3:15 on that day and for the remainder of that day through the next day, testing them through the ten hours which they were at the laboratory and through the next day which makes a total of 56 hours in which I tested them by the conditions present—and then they did not stop, they came right on the next day and I tested

them five times a day for the next week.

Q. Did you find any depression?

A. I found practically no indications of depression—on the motor processes on each dose justified—the amount of speed—the amount of performance—the effect of caffeine is very similar to that on the mental processes in that it exercised a light stimulating influence, and does not persist as long as in the case of the mental processes—involving discrimination and co-ordination—there were also marked stimulations in the very beginning, and in order to make a record of that test I found it necessary to withhold the process for a few minutes and after that is passed I found at the end of 24 hours no depression.

Concerning its effect on sleep my conclusion is that if given in moderate doses and by that I mean doses of 1 to 4 grains—even the pure alkaloid caffeine when taken in a single dose does not appreciably effect the quality of the sleep. When the dose exceeds that, at least when 6 grains is taken in the pure form, it seems to slightly impair the quality of sleep.

Q. What is your conclusion as to the taking of caffeine as it appears in Coca Cola?

A. As caffeine is taken with Coca Cola syrup its action is, so far as I have been able to determine, qualitatively the same except that it is less in degree, and as a result of that, the use of Coca Cola, even with putting on the brakes the stimulation results at once, because its action is quantatively less, and its action on these mental, or in these mental tests as caffeine, when taken along with meals and food substances.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. If I understand, this last chart, you have put in evidence there, and which is headed "Influences with and without caffeine" — wherever the figures drop below 100, I mean 200, the quality of the sleep is better because 200 is normal or the basis or unit, is that right?

A. Yes, sir.

Q. And of course according to that when it exceeds 200 it is worse.

A. Yes, sir.

Q. Now, comparing your no dosage of caffeine, that is the Coca Cola syrup, with one glass of Coca Cola, which you say was Coca Cola syrup, state if the sleep was not, according to your own showing, a better quality, was not better where you took no caffeine than where you took one glass of it —

A. No, sir.

Q. Well, one, is 1.79 and the other is 1.80.

A. In any set of experiments it is always necessary to record probable error, and that probable error of such a difference of 1/100th per cent. is negligent.

Q. That is negligible?

A. Yes, sir.

Q. At the same time it does show a lower percentage, and if it proves anything at all it proves without the Coca Cola a man sleeps better.

A. No, sir, it proves there is absolutely — there is no difference.

Q. You say there is no difference between 1.79 and 1.80?

A. No, sir.

Q. Well, if you were counting dollars you would think there would be a good deal of difference between 1.79 and 1.80.

A. I am not counting dollars.

The Court: Well, never mind about that.

BY MR. MILLER:

Q. This syrup that you used, where did you get that?

A. Well, this first syrup —

Mr. Hirsch: (Interrupting) We will state in order to save time that the ingredients were just as this witness stated.

Mr. Miller: But I want to know where you got it.

The Witness: The Coca Cola I bought in open market in Charles Friedgen & Company, 120 Amsterdam Ave., New York City, the jug of Coca Cola I bought out of the market without stating what I wanted it for. The syrup was mixed in my laboratory by Mr. Culpepper of the New York branch of the Coca Cola Company, and was tested for caffeine.

Q. By whom?

A. By Dr. Chandler of the Department of Chemistry of Columbia University.

Q. Can you make the test yourself?

A. No, sir.

Q. And to the extent that you stated that was simple syrup you base that purely on what somebody told you?

A. Yes.

Q. And to the extent that you state that there was no caffeine in it you are basing that on what somebody told you?

A. Well, I am basing that on analyses made by the Department of Chemistry of Columbia University.

Q. But that is not of your personal knowledge?

A. No, sir.

Q. And so the Coca Cola syrup, or the supposed Coca Cola syrup, whether or not there was any caffeine in that, is purely based on what somebody told you?

A. Well, I bought it in open market.

Q. But that is not of your personal knowledge.

The Court: But that is obvious, he says he bought it in open market.

The Witness: Nobody told me anything about it.

The Court: He says he bought it. I think these are matters of argument that may be properly commented on in the argument.

Mr. Sizer: We will show it was Coca Cola and that it was analyzed by Dr. Chandler.

BY MR. MILLER:

Q. Wait a moment, I am not through with you yet.

A. I just wanted to sit down.

Q. Now, the five glasses that were administered, as shown on the bottom of this chart you have, now what time of the day were they given, I didn't catch that?

A. The first glass was given at between one and one fifteen, in the evening, that is a glass consisting of one ounce of syrup and the rest of the glass filled with carbonated water; the rest of the dose was taken at 3:10 in the evening and that consisted of 2 ounces of the syrup, and the rest of the glass was filled with carbonated water; and the other dose consisted of the same taken at 5:30.

Q. And by the same thing, you mean two ounces of the syrup?

A. Yes, sir, of the Coca Cola syrup with the carbonated water filling the rest of the glass.

Q. It was out of the jug you bought, is that right?

A. Yes, certainly.

Q. Now, when did you leave or when did you separate from this squad you have talked about?

A. You say when did I separate from them?

Q. Yes.

A. Well, during that first month — they came to the laboratory for the hours during which I tested.

Q. That was at ten o'clock.

A. At 7:45 to 8:40; 10:00 to 11; at 12:15 to 1:15; at 3:10 to 4:10 and 5:30 to 6:30. During the intensive periods they came to my room before ten in the morning and I was with them in the laboratory until 9:30 and 10:00 at night on three successive days and the Coca Cola experiments were handled the same as during the first four weeks.

Q. That means you do not know what these people took, what they ate, or what they did from the time they left you until they returned the next morning?

A. Well, it means that I have their statement that they took none of those things I have mentioned.

Q. When you said they did not take coffee or tea or anything, that they did not take one form of stimulant or another, that is simply, you mean, you took their statement for it, and personally you do not know how it is.

A. That is all I know; I know the individuals and their reputation and character.

Q. Now, when you came to compiling your tables of sleep which you have exhibited, you are basing your tables on what these people told you.

A. I am basing them on the introspection of the subject which is one of the chief scientific evidences.

Q. Well, do you base it on what they told you?

A. Well, that is the only method of knowing anything about sleep.

Q. Well, another method would have been to have observed to see whether or not they slept.

A. He would not know anything about it.

Q. He would not.

A. No, sir.

Q. Well, he would have been able to know whether or not they tossed about in their sleep and whether they slept perfectly or normally.

A. He would know their movements, yes.

Q. And you are not prepared to state as to that except what they told you?

A. No, sir.

Q. Have you written any works on Pschycology?

A. I have contributed articles to the Pschycological Review; the American Journal of Pschycology; the Journal of Physiology and Pschycology; the Arizona Journal of Education; the Archives of Pschycology, and I am editor of experimental numbers of the Archives of Pschycology.

Q. Have you or not written any books on Pschycology, and if so give the names of them?

A. I have written a monograph of about 90 pages; I don't know whether you would call it a book or not.

Q. What is the title of it?

A. "The Inaccuracy of Movement."

Q. "The Inaccuracy of Movement?"

A. Yes, sir.

Q. When was that published, and by whom?

A. Published in the Archives of Psychology, which is one of the Columbia contributions, and was published in

the spring of 1909, June, 1909, and is volume No. 3, if I remember correctly, of that series.

Q. Have you a copy of that with you?

A. No, sir.

Q. At the time you conducted these experiments on the squads that you spoke of, you were connected with the Columbia University?

A. Yes, sir.

Q. Isn't it a fact that the object of that University is to advance science and to advertise it to the world?

A. That is one of them?

Q. The advance and investigation of science and then the advertising of the result is one of the objects of your investigation?

A. (Interrupting.) One object of that University is scientific investigation; there are other objects.

Q. Now, there is not any commercial feature connected with it, that is to say such as experimenting for the Coca Cola Company, these are not investigations by that University, are they?

A. The University has various appropriations for scientific research which are conducted —

Q. Was this investigation of yours an investigation on behalf of the University or yourself?

A. This experiment was undertaken on my own account; it was performed in my own private laboratory.

Q. You stated, if I understood you, that the result after taking six grains of the alkaloid is to impair sleep, that is the caffeine?

A. That is my conclusion from my experiments with six grains taken in a single dose, it disturbs sleep.

Q. That would be the result of your observation and experience on adult persons?

A. On persons ranging from nineteen to thirty nine years of age.

Q. Did you make any investigations or any observations on children to see what it would be?

A. No.

Q. During the period of adolesence or say from seven to eighteen years of age, you made none I believe?

A. No, none at all.

Q. I understood you to say, I think that is correct that you did not mean to give any opinion as to the wear or tear of the body during this experimental stage, physically I mean?

A. I stated nothing except what I drew from my conclusions, treating the functions as shown in these mental tests.

Q. I mean as to the tissues?

A. No sir, nothing whatever.

Q. And on the muscles, you express no opinion?

A. No sir, none at all. I am proving the functional psychology, and all I said I intended to refer to the functions of the tissues.

Q. When you stated one lunged less on the second day after he had caffeine than he did on the first day. You simply meant that he did not manifest the peculiar symptoms on the second day as noticeably as on the first day?

A. I don't know that I made any statements about a lunge on the second day.

Q. Didn't you say that a subject after receiving caffeine lunged to do a certain thing, and that on the second day it was less than on the first day?

A. I don't remember; I will state if I did use the word lunge after taking the dose there was that evident lunge caused by —

Q. (Interrupting) The question I asked you, is what you mean by "lunge" in that connection?

A. I can show you.

Q. Well, you can tell us, also?

A. I can show you and also tell you. In that co-ordination test I mean the subject grasped the stick, or grabbed it going at it vigorously.

Q. And that is what you mean by the use of the word "lunge?"

A. I mean behaved vigorously —

Q. In other words, an over stimulation as compared with normal?

A. Well stimulation.

Q. That meant above the average or normal?

A. I don't consider normal a stimulation in the sense I use the word at all.

Q. Didn't you use the words "over-stimulation" and if so what did you mean by it?

A. I meant the over-stimulation that was present in the two or three hours afterwards.

Q. Isn't it necessary doctor or professor —

A. (Interrupting) I didn't catch that.

Q. Isn't it necessary to determine the effect of any drug either scientifically or otherwise, to take the normal conditions as a basis to start with?

A. Yes.

Q. I will ask you to what is the effect of the administration of this drug as compared with the normal?

A. Stimulation followed by no secondary depression.

Q. And when you say that you mean none you discov-

ered?

A. Certainly.

Q. Now, what was the cause of this putting on the brakes that you spoke of, what was the reason for putting on the brakes as you described it in your examination in chief?

A. What was the reason?

Q. Yes?

A. The reason was a man wanted to ring up a better score in the test.

Q. You mean wanted to be more active?

A. When I went to aim at a target I didn't want to feel accelorated or brisk.

Q. If you wish to do steady work why you would not want or wish to go over normal, you would not want stimulation?

A. It depends entirely on the nature—in all these other tests I would want the stimulating effect by it; in the target test the stimulation which immediately follows is not favorable to the test.

Q. Were your weights that you used, these weights you exhibited here, labeled?

A. Yes, sir.

Q. In connection with your other apparatus?

A. Yes, sir.

Q. So that the person who was picking them up could look on the top of the weight and tell what they were?

A. No sir, in no case.

Q. Well, you said they were labeled?

A. They were labeled on the bottom by a secret code known only to myself.

Q. Known only to yourself?

A. Yes, sir, and the weight was in no case turned over.

Q. Now, in the case of the typewriter, you have not determined what if any effect the administration of the drug had?

A. I determined its effect with respect to speed and I have not yet had time to work up my complete record with respect to accuracy.

Q. When did you commence these tests, these series of experiments?

A. I began actually on the 3rd of February.

Q. That means that you began the experiments on February 3rd?

A. Yes, sir.

Q. Of this last February?

A. Yes, sir.

Q. Now, which of the tests was it you didn't put in —

you stated you didn't put in all your tests?

A. There were three tests I didn't put in; there were three — you mean in the second experiment.

Q. Well, I understood you to say you didn't put them in and I want to know what it was you didn't put it?

A. I put them all in the first experiment. On the intensive experiment I worked ten hours, I left out three tests, the cancellation test, I had been unable to detect any effect whatever; there was a size weight illusion in which I had been unable to detect any influence whatever, and I left it out, and the other three — same as on the discrimination tests, I had no time to put them through the three motor tests.

Q. Isn't it true that amount of caffeine in some of your conclusions which would effect a man's sleep would depend — that is he took in Coca Cola, would depend entirely on the amount he had taken in something else, for instance if a man —

A. (Interrupting) Should judge so.

Q. If a man was a coffee user who should use less of caffeine if he was not —

A. (Interrupting) I don't know anything about the effects of more than six grains; I don't know whether any effect or whether effect increases — I have only experimented with doses of six grains.

Q. As a result of your experiments, is it true that those who use coffee and tea, say at the rate of two or three glasses per day in which there are present, assuming, five to eight grains of caffeine, should take less of caffeine or any other drug, as a drug in any other form, I should say, than those who do not take it at all?

A. You mean if they wish to perform these experiments satisfactorily?

A. I mean if they wish to sleep well, and yes, perform these tests satisfactorily?

A. All I can base my answer on those I experimented — I have had some people tell me who do not use coffee and tea —

Q. (Interrupting) If you don't know about their character and habits, I don't want any hearsay about it.

A. I don't know, they told me — I can tell you how these people compared with other people —

Q. (Interrupting) I don't want any hearsay; I want it first hand. Are any of your subjects here?

A. They are not.

Mr. Miller: Are these charts put in evidence, Mr. Hirsch?

Mr. Hirsch: We do not mind putting them in evidence.

Mr. Miller: We will ask they be put in evidence.

Mr. Sizer: They may be put in evidence, marked exhibit so and so.

The Witness: I will number them.

Mr. Miller: Yes, 1, 2, 3, and 4, and so on. I don't remember all the numbers I have given.

BY MR. MILLER:

Q. You may do that a little later. You don't know of course what was in the food that these people took, except as it was taken in your or under your observation?

A. No, all I know is everybody had the same things —

Q. (Interrupting) But you don't mean to say they all ate the same amount?

A. No, I didn't say anything about that at all. I say though that the chances are even that the people who took it took the same amount.

Q. Well, we don't want to try this lawsuit on chances?

A. Referring to my experiments — chances are always taken in the consideration of scientific investigation.

RE-EXAMINATION,
BY MR. HIRSCH:

Q. Are you or not employed to instruct ad. men or advertising men in New York and if so what is the nature of the instruction that you give them?

Mr. Miller: I object to that, we all know what instruction advertising men get.

Mr. Hirsch: I mean in this particular line.

Mr. Sizer: Result of experience and qualifications— relative to that—

The Court: I do not see the nature of the instruction given to advertising men—

Mr. Hirsch: Discrimination—we were going to further qualify the witness is all.

The Court: Well—you will have to make the question a little more specific.

Mr. Hirsch: Well, I will withdraw the question, your Honor.

The Court: I do not see the materiality of it.

The Witness: Shall I take these charts?

Mr. Miller: Yes, and number them 1, 2, 3 and 4 in the way you referred to them.

The Witness: All right.

(Witness excused).

Mr. Sizer: When Dr. Wesener was on the stand on Friday he was asked on cross-examination a question with respect to a number of so-called tea and coffee pois-

ons, and he said he had not examined at that time what it was, and he would return for further cross-examination, and he tells me he has made that investigation and is ready to conclude the testimony.

The Court: Very well.

Mr. Sizer: Dr. Wesener come around please.

J. A. WESENER

resumed the stand for further cross-examination:

BY MR. MILLER:

Q. Doctor Wesener, you have examined the article by Dr. Bullard relating to the effects of tea and coffee drinking and disorders of the nervous system reported in the minutes and proceedings of the Massachusetts Medical Society, these books sent you for that purpose?

A. I read that article by Dr. Bullard, I believe it is on tea; I do not know whether it is on coffee.

Q. And the effects and the evil effects there referred to are described by the writer to the caffeine contents?

A. I don't think so. If you will hand me the book I will read you the passages I have marked, and I think I can show you they do not refer to the caffeine.

Q. I want you to read?

The Court: This witness was asked, as I recall it, to examine the literature to find any instances of caffeine poisoning, any injurious effects of caffeine—

Mr. Hirsch: Serious effects—

The Witness: I think my answer was limited to caffeine—I think the question was limited to caffeine.

Mr. Miller: I understood counsel went so far as to ask for effect of tea and coffee—

Mr. Sizer: The question I asked whether he knew first of any deaths resulting from caffeine—and, second, when caffeine had been taken in excessive quantities whether the results had been of a serious character or whether detrimental—

The Court: You asked him that in a different form, whether he had found any reported cases of serious or permanent injury resulting from the use of caffeine, resulting in death.

Mr. Sizer: I do not recall I did, but that was the line of examination Mr. Miller was conducting—

The Court: It would not be competent to go into that if you didn't ask him, but if you did ask him it is competent to go into the reported cases—my recollection is you did.

Mr. Sizer: Probably I did your Honor.

Mr. Miller: Now I will ask you Doctor —

The Witness: This is an article relating to tea drinking and the disorders of the nervous system by Wm. M. Bullard, M. D. He starts out by saying the action of —

The Court: We do not care for all the article; we have to economize time—you say it does not report any cases of injurious effects from caffeine poisoning—

The Witness: He says it is mechanically and physiogically—he shows that—

The Court: The question was not asked you whether any authors had expressed any opinion as to injurious effect but whether there were any reported cases, and I shall limit the cross-examination to that matter.

BY MR. MILLER:

Q. I will ask the question then in that form—if there are 213 reported cases in that article, or 153 in that article and reference to another showing 52 more, making a total of—well, 213, reported cases, basing it on the caffeine content of coffee and tea according to Dr. Bullard's statement?

A. I should say no, not to caffeine, it is limited to tea drinking; it does not say caffeine but mentions tannic acid quite often. Some of this tea had no caffeine in it at all, it was some old dregs poured over and over, bringing out the tannic acid and some of them had as much or as high as 17.7 per cent of tannic acid; he says tea poisoning.

Q. Is there anything in this article that Dr. Bullard bases this conclusion on as to those two or three cases of poisoning except the caffeine content of coffee or tea?

A. He says in that article he means the effects of tea, and speaks of it as tea poisoning, and he says in a previous article by the same man that often these effects are very much pronounced by the use of caffeine for antidote, and in that case used caffeine for an antidote, for these cases — as a part of the article — tea poisoning produces a condition of irritability —

The Court: (Interrupting) That is beyond the limit of cross-examination — it is limited to chronic cases of caffeine poisoning or to cases resulting from caffeine poisoning.

BY MR. MILLER:

Q. I wish to ask the question in this form — state whether or not, Doctor, Doctor Bullard in this language or rather in this article ascribes these cases as poison of caffeine or its equivalent, which is theine in tea?

A. I don't think he does. I do not remember of his making that statement.

Q. You don't remember his statement?

A. Not as your question, as you have stated it; I would like to see if it is there.

Mr. Miller: Without cross-examining the witness in detail as to the entire article, as adversary counsel have seen this I would like to offer the article in evidence, to be filed as an exhibit to his deposition.

The Court: Hand me the article and I will look at it and see. I will rule on it tomorrow morning.

BY MR. MILLER:

Q. Now, dealing especially with caffeine you examined the article appearing in the Boston Medical and Surgical Journal in 1909 which was called to your attention or sent to your room yesterday —

A. By whom was that article written?

Q. It was by Wesselhœft.

Q. Does not that author there refer to particularly the caffeine content as producing disorders which he writes about?

A. Well, I would have to answer you by saying that was an inspired article.

Q. But I am asking you the question if he does not refer to the caffeine content pure and simple as producing the conditions I referred to?

A. I say that article was inspired — that he was inspired when he wrote that article.

Q. That is not responsive to the question?

A. He refers to caffeine —

Q. As producing these disorders, don't he?

The Court: Reported cases you refer to, Mr. Miller?

Mr. Miller: It is an article of very great length; yes, there are numerous reported cases here as I understand it. This may be filed, but Dr. Wesener has expressed a different opinion—

The Court: Limit it to the rule laid down for cross-examination—

BY MR. MILLER:

Q. I will ask you to state if there are not reported there as coming within the doctor's personal observation cases—

A. Yes, those are reported cases, but not one of those cases show that the caffeine in any way had anything to do with the effects he described there, and this gentleman furthermore writes like an advance agent of a decaffeinized coffee.

Q. And you are testifying somewhat like an advance agent of the Coca Cola Company, Doctor?

A. No, sir, I don't think so. I would not call that a scientific article; he has never done any scientific work. I could not find any reference that he referred to in the book, and I looked that up about two months ago.

Q. Then you made an investigation of the literature?

A. Oh, yes, I have seen that article.

Q. You did make an investigation of the literature on this subject of caffeine some months ago?

A. I think I have read nearly all or looked over something like a thousand abstracts on caffeine.

Q. A thousand abstracts?

A. Yes, sir.

Q. And did you run across, in your examination, these thirteen cases reported by Dr. Witthaus in his book?

A. I did not look at these cases as given in Dr. Witthaus' book; I probably run across them.

Q. You didn't look them up?

A. I didn't read Dr. Witthaus' book.

Q. Your search was not so thorough, then, on the subject?

A. Yes, I think it was very thorough; I think a thousand abstracts would be pretty thorough.

Q. You read those that were favorable and not those that were unfavorable?

A. I read everything I could find on the subject of caffeine.

Q. You could easily have obtained Dr. Witthaus' book?

A. Yes, but his book is a text book and I went to the indexes where all the subjects on caffeine are properly indexed and referred to and easy to look up. I do not say I read all of them but I did my best to get as many as I possibly could.

Q. I want to ask you if you read or consulted in that connection the work by Dr. Kobert entitled "Text Book of Poisons."

A. No, I have not read Dr. Kobert on Caffeine.

Q. Did you not read either Prof. Kunkioki — what he said in his text book on toxicology respecting caffeine?

A. I did not.

Q. Did you or not read what Dr. Kunkill said in connection with your reading on caffeine?

A. I did not.

Q. Did you or not read Lewin, what Dr. Lewin stated in his treatise on toxicology?

A. I don't remember I may have.

Q. Can you tell us what he said?

A. I told you I didn't remember.

Q. Did you read what Dr. Vaughan said in his work on

Cellular Toxins?

A. Yes, sir.

Q. You found there that paraxanthine was classed as a poison, didn't you?

A. I would like to see it; point that out in Dr. Vaughan's book.

Q. I will be more than pleased to do that; I have not the book here but before we conclude your examination it can be submitted to you on that one point. I will send for the book it is over at the hotel.

The Court: We will take a recess until 12:20 o'clock.

(Thereupon the Court took a recess until 12:20 p. m.)

AFTER RECESS.

The court met pursuant to adjournment at 12:20 p. m.

CLAIMANT'S EVIDENCE CONTINUED.

J. A. WESENER,

resumed the stand for further examination:

BY MR. MILLER:

Q. We will present Dr. Wesener —

The Court: (Interrupting) I have examined the article in the Massachusetts Medical Society proceedings on the relation of tea drinking to the disorders of the nervous system which has been referred to, and I am of the opinion that it does not relate to caffeine; it relates to the effects of tea, and of its constituent elements, and I therefore exclude it on the cross-examination of this witness.

Mr. Miller: We have another article which we will now present, but we will be glad if your Honor would examine before passing on it, an article in the Boston Medical and Surgical Journal, and I will submit that to your Honor at the adjourning hour, send it to your Honor's room after adjournment. Now when this witness was excused he was asked —

The Court: (Interrupting) I should have stated more specifically that it does not in my opinion contain a record of any cases of caffeine poisoning or injurious effects resulting from caffeine, that is more accurately the way of stating it.

Mr. Miller: When this witness was excused he was asked as to whether or not Dr. Vaughan in his book classed paraxanthine as a poison, and he said he would like to see the book.

BY MR. MILLER:

Q. I will ask you, I now have the book, if on page 481

and I pass it to him, and will you doctor to examine it and state whether or not I have stated it correctly?

A. Well, Dr. Vaughan in this book here on page 481 gives a table which says "paraxanthine physiological action, poisonous."

Q. Well, that is what I asked?

A. Yes, sir; that is using, however, the word very loosely—that is used very loosely in that connection, and there are other points where he speaks or paraxanthine and I would like to read that —

Q. I have not asked you that but I have asked you merely as to whether or not he classed paraxanthine as a poison, gives that as its physiological action?

A. He presents a table here and simply mentions paraxanthine, gives its physiological action as poisonous —

The Court: Are there any other portions of the book bearing on the subject of paraxanthine as a poison modifying that in any way, that you may read or modify?

The Witness: Yes.

The Court: Then you may read those portions, modifying that very general statement in any way, you may read it.

The Witness: Well —

Mr. Miller: What page are you reading from?

The Witness: Page 403.

BY MR. MILLER:

Q. And that statement I refer to is on page 481?

A. Yes. (Reading) "The physiological action of paraxanthine has been studied by Salomon and by Schmiederberg. Injections into the muscles of 1-2 mg. produced almost at once a rigor mortis like condition"—

Q. (Interrupting) And what is meant by that?

A. Stiffening of the muscle.

Q. Rigor?

A. Yes, stiffening of the muscles. (Continuing to read) "Injection into the muscles of 1-2 mg. produced almost at once a rigor mortis like condition of the muscles affected, with diminished reflex excitability without previous increase. 6-8 mg. introduced into the lymph sac bring on a gradual loss of voluntary motion as well as of reflex irritability."

Q. Please finish that sentence, Doctor, that you were reading from.

A. (Reading) "The rigor is more marked in the anterior extremities, which have a wooden or waxy consistency. Dyspnoea is likewise an early symptom, but as soon as rigor sets in the respirations drop far below the normal and may be absent for several minutes. At times

the lungs are enormously dilated, same as with theobromine. The heart's action is intact till the very last. In mice the reflexes are increased almost to a tetanus."

Q. That is as far as I care to have you read, but you may read anything else you desire.

A. He goes on and refers to experiments or injections of paraxanthine into guinea pigs. Now, all of this refers to the action of paraxanthine when given hypodermically, and therefore, I presume, this table is based upon these experiments, and in this experiment it does not use the word, as far as I can see, "poisonous."

Q. Well, if a thing produces rigor that results in death, you do not call that poisonous—

Mr. Sizer: I object to that. He refers to the application of paraxanthine direct to the muscle, and your Honor has ruled several times that evidence along that line would not be competent.

The Court: Yes, I have excluded it, but I let the doctor read that.

Mr. Sizer: And he read it for the purpose of explaining that the reference in the table referred to particular experiments.

Mr. Miller: Yes, he did, but it was eighty pages behind it, and chapters intervening there—I did not call this out at all.

The Witness: Do you want to see it, Judge?

The Court: If you want to move to exclude that portion, I sustain it.

Mr. Sizer: I did not move to exclude that, but Mr. Miller was proceeding to cross-examine him with respect to what Dr. Vaughan said regarding paraxanthine applied to the muscles as directly; I just called your Honor's attention to the fact that your Honor ruled that would not be gone into.

Mr. Miller: I was cross-examining as to his presumption of what Dr. Vaughan mentioned. I submit either his presumption should be excluded or I should interrogate him about it, one. To make a long story short, I will move to exclude what he presumes. He has read what he considers pertinent there, and I think from that the jury might determine—

The Court: (Interrupting) I sustain the motion to exclude it.

RE-EXAMINATION,
BY MR. SIZER:

Q. Dr. Wesener, does Dr. Vaughan, in discussing paraxanthine or its poisonous effects, refer to in any other place except that portion that you have read?

Mr. Miller: I object to that. The treatise is here and shows for itself, and I am willing to put the entire treatise in evidence.

The Court: But I am not willing to have the entire treatise go into evidence.

Mr. Miller: Asking him to state how Dr. Vaughan refers to it in either particular is incompetent—he may read this entire article.

Mr. Sizer: He was asked by cross-examining counsel if Dr. Vaughan did not refer to it as a poison, and he said he did include it in a certain table, but that at another place in his work he refers to certain experiments and those experiments have reference to the application of it directly to the muscles of animals.

The Court: Well, that table has no connection, as far as the Court can see. It is merely a statement of the word "poisonous," without explaining what it means. I do not see or think it affects the case one way or the other. He does not state there whether it was a poison applied, or poisonous, applied directly, or how it is a poison. The jury have the full benefit of the fact that it appears in the text described as a poison, for whatever it may be worth.

BY MR. SIZER:

Q. I will ask you if you have endeavored to obtain the details of the cases referred to by Dr. Wesselhœft in this article submitted to you?

A. Yes, sir.

Q. Have you made application directly to Dr. Wesselhœft to get that information?

A. I have through a friend of mine.

Q. Were you able to get the cases from him?

Mr. Miller: I object to that as to what was reported through a friend of his; that is hearsay.

The Court: It is sustained, but there was nothing admitted about that from Dr. Wesselhœft, as I recall it. I ruled it did not show any record of any cases, just his opinion about things, which was incompetent.

Mr. Sizer: If that is the case I do not care to ask him any further. Oh yes, I do.

BY MR. SIZER:

Q. I want to ask you if in stating the steps you took in your experiments you omitted any one of the steps, or is there anything now that you desire to refer to in connection with your previous testimony?

A. Why only in connection with the test for caffeine in the urine, I should have said before I shook out the chlo-

roform I treated the urine with ammoniacal silver nitrate and allowed that to stand and filtered that and the filtrate was treated with hydrochloride acid, and then shaken out with chloroform before testing for caffeine.

RE-CROSS EXAMINATION.

BY MR. MILLER:

Q. And what did you state as a result of that? What was the result of that?

A. I found no caffeine.

Q. Well, you state that now?

A. I stated that at that time.

Q. You say you did. You were asked about it, didn't you say you didn't remember at that time?

A. That I didn't remember?

Q. Yes?

A. As to whether I found caffeine?

Q. Yes.

A. I did not say anything of the kind; I state now and I said then and I say it now absolutely I found no caffeine in the urine.

Q. And you state now with emphasis that you were not asked that question the other day and stated you did not remember whether you found it or not?

A. I was asked that question by you the other day and I left out one step in my analysis to prove there was no caffeine present.

(Witness Excused.)

JOHN MARSHALL

the next witness called by the Claimant, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION.

BY MR. SIZER:

Q. Will you please state your place of residence and occupation?

A. I reside in Philadelphia, Pa. I am professor of Chemistry and Toxicology in the University of Pennsylvania.

Q. Now, Doctor, please state your education, qualification and experience in chemistry and toxicology?

A. I received my chemical training in the Pennslyvanian College, of Pennsylvania, and then also at the University of Pennsylvania from which I was graduated with the degree of doctor of medicine. I then went to Germany and studied under Goutlinger, and also in Teuberin where

I was graduated with the degree of doctor of science.

Q. And your present position is what?

A. Professor of chemistry and toxicology at the University of Pennsylvania.

Q. How long have you held that position?

A. I have held that title for the past thirteen years, but prior to that I had held other titles in the teaching of chemistry in the University.

Q. Now, Doctor, is the substance caffeine considered or treated in the literature on the subject of toxicology or by persons familiar with that science as a toxic substance, and if it is in any way state in what connection?

A. In the text books on toxicology published in the English language no reference is made to caffeine as a poison because these books have been written particularly with the idea of describing substances that are ordinarily known as poisonous substances, whereas the text books that have been written in Germany and possibly also in France have included caffeine because they are written more particularly from a pharmo-dynamic view point.

Q. What other substances do they treat of in that same connection with caffeine?

A. Oh, they treat of —

Mr. Miller: (Interrupting) I object to that; I submit that is immaterial what other substances they treat of.

Mr. Sizer: I want to show the connection in which they discuss caffeine—it has been brought out that Kobert and Kionki include them, and I want to show in what connection they discuss it, and what the scope of their works are.

Mr. Miller: And it is treated of in connection with other things in the Bullard article.

The Court: I do not think that is what Mr. Sizer means by his question; I think he means to illustrate the use of the word —

Mr. Sizer: Yes.

Mr. Miller: Another point is this—that when Dr. Emerson was on the stand the other day I was asking him as to harmful substances, and I used that term, and asked him whether or not it was capable of being so diluted as to have no physiological action.

Now, your Honor ruled, as I recall, that I could not ask him if he had made that specific statement on a former occasion because of the fact that harmful substance was a different substance from the one here, namely, caffeine.

The Court: Mr. Miller, I do not see the bearing of that on this present question. The only point is you have introduced the fact that in certain German and French books caffeine is treated in the works on toxicology, and it seems

to me to be fair to show the connection in which it is used, and if that is so, and it seems to be reasonable, and I allow it.

Mr. Miller: Then I have no objection considering the view your Honor takes of it.

The Court: Yes.

Mr. Sizer: That is the point of my question.

The Court: Whether they include salt or anything else?

Mr. Sizer: Yes.

The Court: I think that is fair, and I allow it to be asked.

A. Tartaric acid, the acid found in the juice of the grape is included in the German textbooks but is not in the usual books on toxicology. Citric acid is also included as a substance of that character, and they are not ordinarily looked upon as poisonous substances and they are consumed by human beings daily.

The Court: That is enough along that line, Mr. Sizer.

BY MR. SIZER:

Q. Now, do you know or have you ever read or heard of any case of death resulting from taking caffeine?

Mr. Miller: We are not trying the cases of death. We say this is a poison and that is an unfair limitation and not a proper limitation to put on this question, and that is not the scope of the inquiry. It is not whether they were killed but whether they were poisoned. The Statute says: "Deleterious to health."

Mr. Sizer: That was only one question.

The Court: If you concede, Mr. Miller, that it is not a fatal poison, then I will exclude that.

Mr. Miller: I do not concede that.

The Court: Then they are allowed and he may proceed.

A. I know of no authentic case of death having been caused by the administration of caffeine.

BY MR. SIZER:

Q. In that connection, are you a German scholar or familiar with the German language, and if you have read the Allard and the Zenetz cases in the German language, state it.

A. I am not a German scholar but I can read German.

Q. You have read those two cases?

A. I have.

Q. Do either one of them show that the death resulted from the use of caffeine?

A. My recollection of the Allard case, or cases rather because there were two of them, is that the substance that

was administered was not caffeine but was theocin, and, therefore, that seems to me would rule those cases out of consideration entirely. As to whether death occurred from theocin poisoning or whether from the disease with which the individuals were afflicted, I am not able to say. They were not healthy individuals; they were sick individuals.

Q. And the Zenetz case?

A. I am not inclined to believe that death was caused by the administration of caffeine and I think I am borne out in that because as I remember that case was reported in 1899 and even the German textbooks published since then on toxicology do not contain a reference to the Zenetz case as a case of authentic death having been produced by the use of caffeine.

Q. I want to ask you further whether you know or heard or found in literature any case of serious or permanent injury to health following from excessive taking of caffeine.

A. Before answering that I would like to say in regard to the Zenetz case, that there is no absolute evidence that the woman took any caffeine or compound containing caffeine. There was no examination made of the body to determine the presence of any caffeine after death, and as some of the powders, I remember, were not used, no examination of those powders was made in order to determine the composition of the powders which she took. Now, will you give me that question?

(The last question was read to the witness.)

A. (Continuing) When caffeine is administered in inordinate quantities injury does occur; that is, injury that is temporary in character; and there are cases on record, as for example, a case that I recollect now which was reported in Frerich in which about 22½ or 23 grains of strychnine had been —

Q. You mean, caffeine?

A. Yes, I mean caffeine. Had been taken by an individual with injurious results but they were temporary in character.

Q. What was the nature of those results?

A. I have no clear recollection of the picture.

Q. Is caffeine a habit-forming substance in any sense, and if so, in what sense?

A. I should not say that caffeine was a habit-forming substance in the sense that morphine and chloral and cocaine, and substances of that sort are habit-forming drugs.

Q. Have you made any experiments tending to show the influence of caffeine on the nutrition in man?

A. I conducted an experiment under my personal supervision with respect to the influence of caffeine upon what was termed the nitrogen metabolism.

Q. Will you please state what those experiments were?

A. The caffeine that was employed I obtained by writing to Doctor Schaeffer at Maywood, N. J., and he kindly sent me a sample of caffeine prepared by him and I tested it with the meuraxic test, namely, by vibrating it gently with freshly prepared chlorine water and then applying the evaporated ammonia —

The Court: It is not necessary to go into that unless cross-examined on it.

A. (Continuing) I also determined the melting point so that I satisfied myself that the material with which I was working was the substance chemically known as caffeine. These experiments were conducted upon two individuals whom I shall designate as M. and W. M. is a research student in my laboratory and W. was one of my assistants. They were placed on what is termed the folin diet which consisted of cold milk 500 c. c.; cream containing from 18 to 22 per cent fat, 300 c. c.; eggs, the whole of the egg, the white and the yolk, 450 grams; Horlick's Malted Milk, 200 grams; cane sugar 20 grams; sodium chloride, common salt, 6 grams; and water enough to make two liters; and then it required a quantity of water extra beyond that, which was furnished up to 900 c. c. This diet contained all the elements that are necessary to sustain life in an individual.

One subject was between 22 and 23 years of age and weighed 155 pounds; apparent condition of health, good. Showed very slight trace of albumen in the urine. His average coffee consumption was four cups daily, but of course during a portion of the experiment he did not consume any coffee. That was subject M.

Subject W., age 30 weighed 135, condition of health apparently good, and the urine was normal. His coffee consumption was ordinarily three cups daily.

The Court: You mean before the experiment?

The Witness: Yes, sir; not during the experiment. That was simply to show that they were consumers of coffee. It is very difficult to find any one nowadays that does not consume coffee.

These subjects were put on three days preliminary period for diet adjustment, and during those three days no examination of the urine was made; that is, they subsisted entirely upon the folin diet. This was then followed by a three days normal period during which period of 24 hours the urine was collected and examined and then finally

a third period of three days which we term the experimental period during which there was administered each day 39/100ths grams of caffeine which is equivalent to about six grains of caffeine administered in three equal portions of two grains at each administration, and this amount of caffeine was dissolved in a measured quantity of water, 75 cc., and was taken on the experimental days between 9 and 10, and 1 and 2, and 5 and 6, at the time when their other food was taken, so that each individual at each of these periods during the day received about two grains of caffeine and this is a trifle more than the quantity of caffeine that is contained as determined by the analyses which I have heard here in an average cup of coffee.

Now, the nitrogen contained in the ammonia was determined and the nitrogen in the urea was determined and the nitrogen in the uric acid was determined, and in the purin bases and the xanthine and in all the bodies was determined. In the case of M. the quantity of this substance,—there was nitrogen by analysis within the limits of the nitrogen found; that is the high and low limits, of the nitrogen found by Professor Foree on the administration of this diet individuals during a certain period and therefore called the normal nitrogen output. We also determined the quantity of the purin basis and the quantity of the purin basis during the caffeine period was greater than the quantity given off during the second period, namely, the normal period. In the other cases there was very little variation respecting the nitrogen output, and therefore I should say that the administration of caffeine in the quantities which I have named has practically no influence upon what is termed the nitrogen or protein metabolism of a human being of adult age in normal health.

CROSS-EXAMINATION,

BY MR. MILLER:

Q. First, as to your reading: I will ask you to state if you consulted Schmiedeberg as an authority on caffeine poisons, in this investigation which you made to inform yourself on the subject before coming here to testify.

A. I have read Schmiedeberg.

Q. You recognize him as an authority?

A. He is for some things but possibly there are things in there that are not established.

Q. I will ask you to look on page nine and state if Doctor Schmiedeberg does not treat caffeine under the title of "Nerve and Muscle Poisons."

A. The title of that book is "Schmiedeberg's Pharma-

cology," not Toxicology.

Q. How does he treat it? From a pharmacological standpoint?

A. Yes, sir; from a pharmacological standpoint. He includes caffeine —

Mr. Sizer: (Interrupting) I do not know when a man is testifying as a toxicologist that it is right to cross-examine him on some of the other of the allied sciences. This work is a work on pharmacology and the witness qualified as a chemist and toxicologist.

The Court: I think the cross-examination is proper. It is very hard to observe the minute distinctions that are made.

BY MR. MILLER:

Q. Now, referring to the Zenetz case which you say does not bear out the statement as credited to that case by Doctor Zenetz, I will ask you to refer to page ninety-nine of Doctor Schmiedeberg's book and state if he does not there record the Zenetz case as a case in which the heart was spastically affected and contracted, just as Doctor Zenetz does.

A. I do not see any reference to the Zenetz case on page ninety-nine.

Mr. Miller: Will Doctor Boos show him that? I do not speak German myself.

(Doctor Boos pointed the passage out in the book as requested.)

BY MR. MILLER:

Q. I should have said page ninety-seven?

A. Yes, but as I said before this is a pharmacology and I am speaking as to books on toxicology.

Q. What is the date of that Schmiedeberg work that you have before you?

A. 1909.

Q. Now, if you were not speaking as a pharmacologist or not speaking as to the physiological action of this drug, how could you undertake to say that the drug did or did not cause death, from reading the report of the case?

A. There is no actual report of the death of anybody from the administration of caffeine.

Q. That means, so far as you have found?

A. According to my reading and according to my opinion.

Q. But I say now, if you are not a pharmacologist or, rather, if you are not a man sufficiently versed in medicine to tell by reading the symptoms as described by a man who reports a case in connection with the drug administered whether it would cause death or not, how are you prepared

any better than the ordinary layman to tell whether that drug did cause death?

A. In the first place, it has not been proven that the individual in the Zenetz case took caffeine; and, in the second place, from my reading of that case in the original literature, I am inclined to think it is not determined whether the individual died from some other disease,—heart disease, for example, or whether the individual died from caffeine poisoning, assuming that caffeine had been administered.

Q. But there are several of the Zenetz cases, I do not mean to limit myself to one, but in this particular one that is referred to and where you say it is not proved that the caffeine was given, the report by Doctor Zenetz shows that this young woman took those powders?

A. Yes, sir.

Q. That is, caffeine powders?

A. Yes, sir.

Q. That is as near proof as you get of anything in a reported case by some physician who reports the case, is it not?

A. If a physician reports a case he usually reports it from administration by prescription of a substance. This was not administered by prescription but was taken, as I remember, from the medicine chest.

Q. Some powders that the young woman had gone to the medicine chest and procured and then taken?

A. Yes, sir.

Q. Those two powders that were not analyzed were two that she did not take?

A. Yes, sir.

Q. They would not have produced death?

A. No, sir; but they could have been analyzed and their composition determined.

Q. How do you know that they were not analyzed?

A. There is no report that they were.

Q. That merely means that the case does not show that there was an analysis, positively?

A. The case does not show an analysis.

Q. Have you written any book on toxicology?

A. No, sir.

Q. Do you hold that there are, or are not, inherent poisons?

A. I hold that there are not inherent poisons.

Q. Strychnine and arsenic, none of those are inherently poisonous?

A. They evidently have some chemical action and kill by the chemical action.

Q. And caffeine has some chemical action?

A. Chemical action that has not been determined.

Q. Has the chemical action of strychnine been determined?

A. No.

Q. What, if any, difference is there physiologically between theocin and theophyllin, if you know any?

A. I know that theophyllin is obtained from the tea leaf but it is present in very slight quantities in the tea leaf, and therefore, it was prepared sythetically because it was believed it might be of pharmacological value. Therefore, theocin is a name for the synthetic product. Now, whether there is any difference between the physiological and the toxic action of theophyllin and theocin, I do not know.

Mr. Miller: I move to expunge all the portion of the witness' answer except that portion which answers that he does not know whether there is any physiological difference.

Mr. Sizer: That was an explanation —

The Court: I do not think it was. I sustain the motion although it has been proven a good many times.

BY MR. MILLER:

Q. Theophyllin is obtained from caffeine?

A. From caffeine?

Q. Is not caffeine broken up in the system and does it not form theophyllin?

A. Theophyllin is a dimethylxanthine, and, therefore, you may speak of a dimethylxanthine as theophyllin.

Q. Caffeine is converted into that form or is in part when it goes into the system?

A. Yes, sir; that is dimethylxanthine.

Q. In making your investigation as to the determination of fatal cases that followed the use of caffeine, did you consult the thirteen that are reported by Doctor Witthaus when he was on the stand this morning?

A. No, sir; I did not.

Q. Did you not look at those thirteen?

A. No, sir.

Q. That is an English publication all right, is it not?

A. Yes, sir; it is, but I would not like to qualify on that because my copy of Witthaus disappeared from my library and that is the reason I did not consult it.

Q. Doctor Horatio C. Wood who was on the stand this morning—the publication he refers to is an English publication that he assisted in?

A. Yes, sir; but I distinguish between a pharmacology

and therapeutics and toxicology. He has written from the viewpoint of a pharmacologist with a special view to the treatment of disease.

Then, if I understand you, the testimony or statement you made in chief that you had investigated to find reported cases of death due to caffeine was limited to works on toxicology and not to the medical works?

A. Correct; right.

Q. And not vital statistics at all but to wroks on toxicology?

A. Correct.

Q. Then I won't go outside of that realm on cross-examination. Now, as to the two individuals that you experimented on to determine the effect of nitrogenous metabolism, those individuals were under your care all the time?

A. They were under my supervision; I did not sleep with them. Three in a bed is too many.

Q. You were separted from them fully half of the time?

A. I was with them all the time during the daylight hours. At night I was not with them.

Q. Just what they took after they left you, you do not know?

A. No, sir; but they were trustworthy.

Q. We all profress to be trustworthy, but I ask you for a positive experiment to prove something and I understand you do not know what they took after they left you?

A. No, sir.

RE-DIRECT EXAMINATION.
BY MR. SIZER:

Q. Were the thirteen cases referred to by counsel as reported by Doctor Witthaus, cases of death or permanent injury from the use of caffeine, so far as the report goes?

A. I have not read this report.

(Witness Excused.)

DR. CHARLES F. CHANDLER,

the next witness called on behalf of the claimant and intervenor, the Coca Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION.
BY MR. SIZER:

Q. State your full name, residence, and occupation.

A. Charles F. Chandler; residence, New York; occupation, chemist.

Q. And what position do you now occupy?

A. Professor of Chemistry in Columbia University.

Q. Please give us your education and training as a chemist.

A. I began the study of chemistry in the New Bedford High School about 1851; in 1853 I went to the Lawrence Scientific School at Harvard and stayed a year; then I went to Germany and studied in the universities of Berlin and Guettingen and received my degree in 1856.

A. What degrees have been conferred on you by different institutions?

A. The University of Guettingen gave me the degree of Master of Arts and Doctor of Philosophy. In 1906, the same university gave me an honor diploma for fifty years of honorable service in my profession. I received the degree of Doctor of Laws from Union College, and I received the degree of Doctor of Medicine from the University of New York and the degree of Doctor of Science from Oxford University, England.

Q. What different colleges and instiutions have you been connected with?

A. I was for eight years at the head of the chemical department of Union College, and I have been for nearly 47 years at the head of the department of the Columbia University. I have also been for 44 years Professor of Chemistry in the New York College of Pharmacy and for 25 or 26 years Professor of Chemistry and Medical Jurisprudence in the College of Physicians and Surgeons at New York.

Q. Did you ever serve as chemist on any board of Health at New York City.

A. Yes, sir; I was about six years chemist of the Metropolitan Board of Health and for eleven years president of the Board of Health in New York.

Q. What scientific societies are you a member of?

A. The National Academy of Sciences, life member of the American Chemical Society, President at one time of the Paris Chemical Society, the London Chemical Society, the Berlin Chemical Society, member of the Chemical Society of Industry and past president, member of the Faraday Society and the Verein Deutcher Chemiker, of the New York Academy of Sciences, Philadelphia Academy of Science, the Washintgon Academy of Science, and several others that I do not recall.

Q. Have you ever been engaged in the service of the National government, and if so, in what capacity?

A. I was called upon on many occasions to make investigations for the National Government. President Cleveland sent for me and I spent an entire day, from ten

o'clock in the morning till ten o'clock at night with him in consultation on as to how cholera could be kept out, congress having placed in his hand $400,000 for that purpose. I was appointed by President Arthur Commissioner for the Health Exposition in London, and for the Sanitary, International Congress in Copenhagen. I was appointed by President McKinley, later by President Roosevelt, a member of the Board of Visitors for the National Observatory at Washington. I have been repeatedly called upon by the heads of departments at Washington, through the National Academy of Sciences to make investigations. The Charter of the National Academy of Sciences requires that its members shall respond whenever called upon by any department of bureau of the Government to make investigations into any scientific subjects gratuitiously, and I have served on a number of commissions, the Glucose Commission, the Denatured Alcohol Commission, and I have been called upon by the Post Office Department t etermine whether postage stamps were poisonous, and by the Navy Department to investigate the process employed for preserving paper in the navy. Several others which do not at this moment occur to me.

Q. Have you ever been connected with the administration of any food and drugs law?

A. About thirty years ago, the National Board of Trade offered prizes to the extent of a thousand dollars, divided in three prizes, for the best draft of a law to prevent the adulteration of food and drugs. I was one of the committee to award the prizes. After studying the different proposed laws, we awarded the prizes, but none of the laws were quite satisfactory, and I sat down in my library with counsel for the health department, being myself president at the time, and we drew up a law for the prevention of the adulteration of foods and drugs, hich seemed to us to be a suitable law. We placed that in the hands of the National Board of Trade and they secured its passage in some of the states, New York in particular. Being a member at that time of the State Board of Health, we undertook to enforce the law, but unfortunately at that time, the public was not prepared for the enforcement of such a law, and although we brought cases before the courts —

Mr. Miller: We object to what he has done in matters of that kind, as being foreign and irrelevant to this case.

The Court: I sustain the exception.

BY MR. SIZER:

Q. I want to ask you if you have made any study or had any experience with toxicology?

A. I have. I have studied for the purpose of lecturing on it, and I have examined several cases of alleged poisoning where I had occasion to analyze the remains of the deceased.

Q. Do you know the substance caffeine?

A. I am familiar with caffeine.

Q, Is caffeine a toxic or a poisonous substance?

A. It is not.

Q. Is caffeine, as made in beverages—does the use of it result in any serious impairment to the health of the person using it?

A. It does not.

Q. Have you had personal experience in that line?

A. I have drunk coffee very freely for sixty years. I began when I was fourteen years old and I used always two cups of coffee for breakfast, and I have always taken coffee at night with my dinner, and I have never noticed any objectionable effect.

Q. Did you make an analysis of a sample of Coca Cola syrup submitted by Doctor Hollingworth?

A. I did; that is, it was made in my laboratory under my directions.

Q. What did you do with that sample and what did you find to be the condition of it?

A. Mr. Hollingworth brought two samples of syrup, one contained caffeine and one did not, and he wanted to determine which, and I gave it to Professor Metzger, Professor of Quantitive Analysis at Columbia, and also my Assistant and I told him to extract the caffeine and bring it to me, and he did so. One sample yielded fine crystalline product, having the exact appearance of caffeine, and the other did not. I made the report to Professor Hollingworth.

Q. Did you make any definite experiment with that substance above brought you—did you determine that it was caffeine,

A. I am familiar with the appearance of caffeine as obtained in analysis, and this had the exact appearance, and that seemed to answer the question put to me, and I so reported.

Q. Did you ever make any other analysis of Coca Cola syrup in 1907?

A. Judge Candler placed in my hands—he told me to procure a sample of Coca Cola syrup, and I sent my assistant to a place in New York where they sell Coca Cola syrup and I told him not to mention my name or let anybody suspect it was for the purpose of making an analysis or examination, and I examined for cocaine and there was

none, and I tested it for caffeine and it amounted to 1.22 grains per fluid ounce.

CROSS-EXAMINATION.

BY MR. MILLER:

Q. You don't know what was in the syrup that was brought to you except as it was reported to you by your Assistant, and the fact that you looked at it?

A. That is all.

Q. I ask you if it is not true that morphine bears the same visible appearance of caffeine?

A. I never saw any morphine that looked like the substance which I believed to be caffeine in that analysis.

Q. What do you say are the distinguishing characteristics as between morphine and caffeine to the naked eye?

A. It is difficult to describe that. A person knows his two brothers apart but it is very difficult to describe them so that another person would recognize the difference.

Q. You cannot tell what the visible differences are?

A. No, sir; the eye becomes so experienced in the course of time in examination of things that you tell a thing the minute you look at it. I studied mineralogy and I can pick out fluospar and feldspar and barytes—the eye detects the color and while it is difficult to describe so that any other person without experience can tell.

Q. And so, with this long experience as a man of letters, you are unable to tell the jury what the difference is between morphine and caffeine to the naked eye?

A. Yes, sir; it would be difficult for me to describe the difference. A shepherd knows his sheep, but he could not tell anybody else so that they would know them except after long experience.

Q. He could tell a sheep from a goat?

A. Yes, sir.

Q. You were not a member of the committee of one hundred on the advancement of the national health appointed by President Roosevelt, were you?

A. No, sir; I was not.

Q. Are you engaged in teaching now?

A. I have just retired, that is, I shall be retired on the 30th of June after 46 years of service at Columbia.

Q. I will ask you if it is not a fact that your compensation depends on the outcome of this case, and that it is to be $10,000?

Mr. Sizer: I don't think that is proper.

Mr. Hirsch: Let him answer.

A. I never heard of any such a proposition.

BY MR. MILLER:

Q. Didn't you name that as your figure for which you would undertake the investigation?

A. No, sir. I never but once in my life received a fee of $10,000 and that was when I was sent to Europe for the Standard Oil Company.

Q. Who was the first to approach you to obtain the benefit of your investigation and testimony in this case as a representative of the Coca Cola Company?

A. Judge Candler came to me.

Q. Anybody else confer with you about it before you came down here relative to your experiments and investigation.

A. Yes, sir. I have met some of the experts.

Q. I am not speaking about those, but I ask you if anybody went to you to procure you to come here to testify.

A. I don't remember anybody.

Q. Nobody else except Judge Candler?

A. I don't remember of seeing any one except the experts and counsel in the case.

Q. Do you hold as a toxicologist and chemist that there is such a thing as an inherent poison?

A. I do not know what you mean by an inherent poison.

Q. You have heard the witnesses testify on the stand, Doctor Wesener and this last witness Doctor Marshall, you heard their testimony?

A. I did.

Q. You do not know what is meant by an inherent poison?

A. I do not recall that term, "inherent." If you mean by inherent poiscon a substance which is under all circumstances a poison, I do not think there is such a thing.

Q. Now, referring to the administration of caffeine in drinks, you say as it is ordinarily administered, in your opinion it does not have any deleterious effect, is that what you said, or any poisonous effect?

A. I do not remember what I said but I will say that I do not think caffeine administered in moderate quantities is in any sense deleterious or injurious.

Q. Moderate quantity depends entirely on the age and size and sex of the individual consuming the diet?

A. I think very possibly.

Q. Also on the health?

A. I think possibly.

Q. Did you make a report to the Coca Cola Company as a chemist as to a chemical analysis of Coca Cola at any time?

A. I did. At the time I investigated it for cocaine.

Q. When was that?
A. That was in 1907.
Q. Have you a copy of that letter?
A. I have one pasted in my notebook; I will read it to you.
Q. I shall be glad to have you read what you said in 1907.
A. (Reading.) "New York, Oct. 16, 1907.

"Hon. John S. Candler,
Washington, D. C.
My dear sir:

I have finished a very careful analysis of Coca Cola purchased in New York City and I find that they contain caffeine, the alkaloid of tea and coffee, 1.226 grains in each fluidounce; alcohol, a trace, such as might come from the use of flavoring extracts; cocaine, none whatever. Cane sugar, a large quantity."

(Signed.)

Q. That was the result of your chemical analysis?
A. Yes, sir.
Q. Truthfully recorded?
A. It is.
Q. That was the first investigation you made of it, in 1907?
A. It was.
Mr. Sizer: What is your age, Doctor?
The Witness: Seventy-four years old.
(Witness excused.)
The Claimant and Intervenor then read in evidence the following depositions:
Mr. Hirsch then read the following depositions:

MRS. E. M. STEVENS,
called as a witness on behalf of the claimant, was duly sworn and testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. What is your name?
A. E. M. Stevens.
Q. Where do you live?
A. 660 51st Place west.
Q. Chicago?
A. Yes, sir.
Q. What is your occupation?
A. Well, before I was married I taught school, but since then I am cooking.

Q. Where?
A At the City Hotel, 16th and State.
Q. In Chicago?
A. Yes, sir.
Q. Do you remember an occurrence about the 5th day of February?
A. I was right in it.
Q. On a Sunday?
A. Yes, sir.
Q. What happened there?
A. Do you want me to begin at the beginning and just tell it?
Q. That was on the 5th of February, 1911?
A. Yes, I know.
Q. Tell me what happened there. You need not go into the whole story.
A. Not the details?
Q. No, just tell the result.
A. Well, there was a porter and that morning he wanted a waitress to serve him his breakfast just as if he was a guest, and she refused. He came out and he said—she got his order and I asked him if that was for a guest, and he said yes. He came back and said, "No, it is for myself. I will pay for it," and this time she came out for her order and she says, "He wants me to serve it to him," and she says she would not do it.
Q. Now, who was that she?
A. This was Stella.
Q. Do you know her last name?
A. No, sir, I don't know. Never learned her last name at all. Stella was all I knew her by. And then I left the kitchen and went back in the rear. Before I left the kitchen he came out and goes to the basement, and then I left the kitchen and went back to the rear and I hadn't been out five minutes when I heard the shooting and I knew it was her. I don't know why—because I knew there was not anyone else in the kitchen except her, and I started to go out the rear door and it was locked, and then I turned to go through the kitchen and just as I turned to go through the door she came running in and him after her and he fired two shots that killed her. I saw the blaze from both barrels of the pistol.
Q. And she was shot dead?
A. No sir, she run from there clear through into the hotel lobby and the house keeper and the day clerk saw her sinking and caught her and laid her down and she died in fifteen minutes.
Q. Do you remember what you did on February 6th,

Monday, after this occurrence?

Q. Do you remember where you were?

A. I was at the inquest.

Q. Do you remember where that was?

A. That was on Wabash Avenue, but I don't remember the number, nor I don't remember the Coroner's name there, anything about the place.

Q. Do you remember near what cross street it was?

A. No sir, I don't.

Q. Do you remember seeing me there?

A. Yes, sir, I remember seeing you.

Q. Do you remember seeing this lady there?

A. Yes, sir; she was there.

Q. (The witness points to Mrs. Mary Ciombro who is asked to stand up by the counsel.)

Q. Do you remember whether or not this lady to whom you just pointed identified the body of the dead girl that day as Stefinia Porembor?

A. Yes, sir, she identified her as Stefinia and that other name, I can't tell. But then you know I didn't know her only as Stella.

Q. But she identified the same body?

A. Yes, sir; she identified the same body. I saw the body taken out of the hotel.

Q. Mrs. Stevens, what are your duties at the City Hotel?

A. Well, I am cook there. I have the care of the kitchen.

Q. And this girl Stefinia or Stella, as you knew her, was employed there?

A. Yes, sir, she was a waitress there.

Q. Now, do you know what her habits were there as to drinking tea and coffee?

A. Well, sometimes she would take a cup of tea twice or three times a day and again it would be coffee.

Q. How long was she employed there?

A. Well, she came there between October and November.

Q. 1910?

A. Yes, sir.

Q. And stayed there until she was killed?

A. Yes, sir.

Q. On the 5th of February, 1911?

A. Yes, sir.

Q. Now, how many cups of coffee or tea would you think she drank on an average a day?

A. Well, it would not average I think over five a day, both together. That is, just a rough guess.

Q. That was from —

A. From the time she would come on duty. She generally took a cup of coffee when she first came on duty. We all do that. And then when she would eat her breakfast it would be either a cup of coffee or a cup of tea, and then sometimes she would take a cup between dinner and breakfast and dinner, and sometimes she would not drink anything of the kind at dinner, and again she would.

Q. That happened daily?

A. Yes, sir; that was daily.

CROSS-EXAMINATION
BY MR. HULBERT:

Q. When did you start to work at the hotel, the City Hotel?

A. 20th of October.

Q. 1910?

A. Yes, sir.

Q. Was this girl still there at the time?

A. No sir, she was not there.

Q. When did she go to work?

A. She came there between October and November.

Q. Do you know when?

A. No sir, I don't remember the day.

Q. When was she killed?

A. Sir?

Q. When was she shot?

A. Between eight and nine Sunday morning.

Q. On Febraury 5th.

A. Yes, sir.

Q. What time of day did she go down to work as a general rule?

A. At six o'clock Sunday morning.

Q. Every day at six o'clock in the morning?

A. At six o'clock Sunday morning, and then sometimes it would be a quarter to six when she would come down, and then it would be almost six.

Q. She only worked on Sundays?

A. She worked all the time there, every day.

Q. Then she came there at six o'clock every morning?

A. Well, Sunday morning —

Q. I don't mean Sunday morning. What time did she go to work mornings?

A. A quarter to six.

Q. The first thing she did was to take a drink of coffee?

A. She would get her things off to go to work and prepare ready for the guests and then if she had time she would take a cup of coffee or a cup of tea.

Q. And you saw her every morning?

A. I saw her every morning. That was the first place she would go, to the kitchen.

Q. And do you say you saw her drink a cup of coffee every morning between October the 20th and February 5th?

A. Yes sir, a cup of coffee or tea.

Q. When next during the day would she take a cup of coffee or tea?

A. Well, sometimes it would be about between breakfast and dinner. You know she would not eat—she would eat a very light breakfast, and then she wohld have to hustle there through her work because she had quite a little work to do, and when she got through it would be between ten and eleven or about ten, and then perhaps she would take a cup of coffee or tea.

Q. That is two cups. Now, when would she drink again?

A. Perhaps she would take one at dinner, or a glass of water.

Q. You mean at noon time?

A. Yes, sir.

Q. That is three cups. When again would she drink?

A. Then again for supper she would generally take a cup of coffee or a cup of tea.

Q. That is about six o'clock in the evening?

A. Yes, sir.

Q. And altogether about four cups of coffee during the day?

A. Yes sir, between four and five. Something along there.

Q. That is all she drank of tea or coffee during the day?

A. Yes sir, that is all I knew of her drinking.

Q. Did she ever drink any other drinks, liquor of any sort during that time?

A. Well, when she first came there she would have a glass of beer, but toward the last she didn't drink that at all because I talked to her and told her that she should not do it, and if she drank it, she drank it after she went off duty, you know, and I didn't know anything about that.

Q. Are you related to her—to this Stella?

A. Me?

Q. Yes.

A. No, indeed.

Q. How old a woman was she at the time, do you know?

A. Well, she was along between eighteen and twenty-three I think. Along there somewhere. I don't know. I

never asked her age, but judging from her appearance she would be along there, about that age.

Q. Have you talked to anybody about your testimony?

A. No, sir; I have not.

Q. How did you know that you were going to be asked as to her drinking tea or coffee?

A. Well, the gentleman at the inquest asked me these questions.

Q. You have not talked to anybody since then?

A. No, sir, I have not. He was there taking notes and asked me something in regard to it, and then when I left he came, he came out then after me and told me perhaps I might be wanted again, and I give him my name and address where I was working.

Q. And you have not spoken to Mr. Hirsch or any other lawyer since then?

A. I have not seen anyone since then.

MRS. E. M. STEVENS.

Subscribed and sworn to before me this 3rd day of March 1911.

Mark A. Foote, United States Commissioner.

(SEAL)

MARY CIOMBRO,

called as a witness on behalf of the claimant, was duly sworn and testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. What is your name please?

A. Mary Ciombro.

Q. Where do you live?

A. 18th Place and Wood.

Q. Chicago, Illinois?

A. Yes, sir.

Q. Do you know Stefinia Porembor?

A. Yes, sir.

Q. Is she dead or alive?

A. She dead.

Q. When did she die?

A. 5th of February.

Q. Did you attend the inquest by the Coroner over the body of Stefinia Porembor?

A. Yes, sir.

Q. On Monday, the 6th of February?

A. Yes, sir.

Q. 1911?

A. Yes, sir.

Q. You remember where that was?

A. I could not remember that.
Q. Do you remember the name of the street?
A. No. It was on Wabash.
Q. On Wabash Avenue?
Q. Do you remember seeing me there?
A. Yes, sir.
Q. Did you identify the body laying there that day as the body of Stefinia Porembor?
A. I could not tell you that.
Q. Were you asked that day whether that was the body of Stefinia Porembor?
A. I could not tell you that.
(From this point on the witness was examined through sworn Polish interpreter.)
(Question repeated by the stenographer as follows: "Did you identify the body laying there that day as the body of Stefinia Porembor?")
A. Yes, she was notified.
A. Do you understand what identified means?
A. No.
Q. I will change the question. Were you asked at the inquest whether or not the body lying there was the body of Stefinia Porembor?
A. I could not pronounce that word to you.
Q. Was the body of Stefinia Porembor lying there on that day that the inquest was held at Wabash Avenue? Was that the body of Stefinia Porembor there at that place on Wabash Avenue when you were there on February the 6th?
A. She said—you can't get that work out of her very well.
Q. Do you remember what happened at the inquest?
A. As much as she says what happened there, she was sworn and then she saw what was happening there, what was there, everything.
Q. What questions were asked her?
A. She said they were asking what happened to her and what she drank, as much as they asked her.
Q. Was she asked whether or not that body was the body of Stefinia Porembor?
A. She don't remember anything of what happened very much because she was too excited.
Q. Did you see the body of Stefinia Porembor at that hearing?
A. Yes, sir.
Q. How old was Stefinia?
A. Twenty-one.
Q. How long have you been in America?

A. Me? Six years.
Q. How long was Stefinia in America?
A. Four.
Q. Do you know anything about the habits of Stefinia as to drinking tea or coffee?
A. She was drinking it. She was drinking coffee more than tea.
Q. Where did Stefinia live in Chicago?
A. She was there right by me.
Q. Where did she live?
A. She lived in 1834 South Wood Street.
Q. Is that where you lived?
A. Yes, sir.
Q. How long did she live with you?
A. A year.
Q. How many cups of coffee or tea would you say that Stefinia drank on an average a day while she was living there with you?
A. Two or three cups of coffee or tea.
Q. Where were you born?
A. In the old country.
Q. I know, but what old country?
A. Austria.
Q. Where was Stefinia born?
A. In Austria, too.
Q. Was she born in the same city that you were born?
A. Yes, sir.
Q. Did you know her in the old country?
A. Yes, sir.
Q. What relation are you to her?
A. Cousin.
Q. Do you know the habits of Stefinia Porembor when you were living together in the old country as to her drinking tea and coffee?
A. Coffee she drink coffee.
Q. About how many cups on an average do you think that Stefinia drank in the old country that you know of?
A. She didn't drink much coffee there.
Q. How?
A. She didn't drink much coffee there.
Q. Well, how much would you say?
A. A cup a week or two a week.

CROSS-EXAMINATION
BY MR. HULBERT:

Q. Did you work at the same place that Stefinia worked?
A. No, sir.

Q. Where do you work?
A. I ain't working now.
Q. Are you married?
A. Yes, sir.
Q. Stefinia lived at your house?
A. Yes, sir.
Q. Sleep there at night?
A. She was living in a hotel, but that last night that she got killed she was sleeping with me.
Q. That is from October 5th or from October 10th around to the time she was shot she lived at your house most of the time.
A. No, she came around once or twice a week.
Q. Only one or twice a week?
A. Yes sir. But she does not sleep by me.
Q. Did she drink any tea or coffee in your house?
A. She drinks coffee once in a while.
Q. She drank coffee one or two times a week that she came to your house?
A. Yes, sir.
Q. Now, the time that she came to your house, when was it, was it in the morning or was it at night?
A. At night.
Q. What time at night did she come?
A. About eight o'clock.
Q. Eight o'clock.
A. Yes, sir.
Q. What would she do first? Would she drink a cup of coffee as soon as she came in or not?
A. No sir, she drinks coffee, and sometimes she doesn't drink anything.
Q. Sometimes she does not drink anything?
A. No.
Q. Did she go to bed and sleep at your house or not.
A. No, just stayed there Sunday and then she was sleeping by me.
O She came there and visited you awhile and then she would go back to the hotel?
A. Yes, sir.
Q. You didn't see her at all during the day time?
A. No, sir.
Q. She was working all that time?
A. She was working?
Q. And the only time you ever saw her drink tea or coffee was the two or three times within the period of four months when she came to your house?
A. Yes, sir.
Q. In the evening for short visits?

A. Yes, sir.
Q. That is all you know about her drinking tea or coffee?
A. Yes sir, that is all.

RE-DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Did Stefinia ever work for you?
A. Yes sir, she was working by me for about four months.
Q. And during the time she was working for you did she take her meals at your house?
A. Yes, sir.
Q. Do you know whether or not during that period she drank coffee or tea?
A. She drinks coffee or tea.
Q. During the period that she was working for you how many cups of coffee or tea would she usually drink on an average a day?
A. Three or four cups of coffee or tea.

RE-CROSS EXAMINATION.
BY MR. HULBERT:

Q. When did she start to work for you?
A. Last year in February.
Q. 1910?
A. 1910.
Q. How long did she work for you?
A. Four months.
Q. What year was that in February? 1910?
A. Last year, 1910, yes sir.
Q. What kind of work?
A. Common work.
Q. Common house work?
A. Yes, sir.
Q. Cook?
A. Cook, yes sir.
Q. What were you doing while she was working there?
A. I was not doing anything.
Q. You were not runing a hotel or boarding house or anything of that sort?
A. No sir.
Q. Did you see her all day long?
A. I saw her all day long.
Q. And you saw her every time she drank tea or coffee?
A. Yes, sir.
Q. And you say on an average she would drink about

three cups of coffee or tea a day?

A. Three or four.

Q. What was she doing after she left you up to the time she went to work at the hotel?

Q. From July until October what was she doing there?

A. Working in the hotel.

Q. No, what was she doing there? She went to work in the hotel in October. What was she doing from that time on, if you know?

A. I don't know.

Q. What was she doing after she left you until she went to the City Hotel?

A. Nothing.

Q. What kind of coffee did she drink at your house, do you know? Was it strong coffee or weak?

A. It was not very strong.

Q. Not very strong?

A. No.

Q. Was it very strong tea?

A. No.

MARY CIOMBRO.

Subscribed and sworn to before me this 3rd day of March, 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

JOHN MANGOLD,

called as a witness on behalf of the claimant, was duly sworn and testified at follows:

DIRECT EXAMINATION.

BY MR. HIRSCH:

Q. What is your name please?

A. John Mangold.

Q. Where do you live?

A. 1439 South Lawndale Avenue.

Q. Chicago?

A. Chicago.

Q. What is your occupation?

A. Police officer.

Q. What force?

A. Central Detail.

Q. Chicago, Illinois.

A. Yes, sir.

Q. Mr. Mangold, do you know William Mangold?

A. Yes, sir.

Q. What relation was he to you?

A. My son.

Q. Is he dead or alive?

A. He is dead.
Q. When did he die?
A. 13th of February.
Q. That is 1911 he died?
A. Yes, sir.
Q. Did he ever live with you?
A. Yes sir, he lived with me up until the time that he got married. It will be five years next June.
Q. How old was he when he died?
A. He was thirty years and eleven months? He would be thirty one years the 13th of this month.
Q. Do you know anything about his habits as to drinking coffee or tea?
A. While he was with me he was always drinking coffee.
Q. How long did you say he was living with you?
A. Up to the time he got married.
Q. And he has been married how many years?
A. He has been married five years next June.
Q. And how old was he when he died?
A. He was thirty years and eleven months.
Q. Up to the time when he got married, what would you say would be the fair average of number of cups of coffee or tea that he drank while he was with you?
A. Oh, probably three cups a day.
Q. Of what?
A. Of coffee.

CROSS-EXAMINATION
BY MR. HULBERT:

Q. What business was William Mangold in?
A. He was in the real estate business.
Q. Both before and after his marriage?
A. Yes, sir.
Q. How old was he when he started in that business?
A. Sixteen years old.
Q. And he worked day times?
A. Yes, sir.
Q. And you were on duty day times?
A. Yes, sir.
Q. Your wife is living?
A. Yes, sir.
Q. Up until his marriage he lived at your house?
A. Yes, sir.
Q. What time in the morning do you generally leave your house?
A. I generally leave earlier than the others. I used to leave about half past six in the morning.
Q. What time did you get home at night?

A. I got home at half past six or six.

Q. You would not see your son at all during that time from six-thirty in the morning until six-thirty at night, would you?

A. No.

Q. You would not know how many cups he drank during that period of time, would you?

A. No, only what he would drink at night.

A. I would see him drink in the morning, but of course that is all we would have, coffee in the morning and coffee in the evening.

Q. So as a matter of fact he would only drink a cup of coffee in the morning and only one at night, is that right?

A. Yes, sir. I don't know what he would drink at noon time. I suppose he would drink coffee, too.

Q. You don't know of your own knowledge?

A. No.

RE-DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. When was the first time you saw the body of your son after he died?

A. The 13th of February.

Q. Where?

A. At the morgue.

Q. What morgue?

A. County morgue.

Q. Cook County morgue?

A. Yes, sir.

Q. Were you asked to identify the body?

A. Yes, sir.

Q. And did you?

A. Yes, sir.

RE-CROSS EXAMINATION.
BY MR. HULBERT:

Q. What did your son die of?

A. I could not tell you. They claimed it was ptomaine poisoning. I don't know whether it was or not. He died very sudden on the street.

JOHN MANGOLD.

Subscribed and sworn to before me this 3rd day of March, 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

PAUL EISERMANN,

called as a witness on behalf of the claimant, was duly sworn and testified as follows:

DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. What is your name?
A. Paul Eisermann.
Q. Where do you live?
A. 2948 West 39th Street.
Q. What city?
A. Chicago.
Q. How old are you?
A. Twenty-five.
Q. Do you know Rheinholt Eisermann?
A. Yes, sir.
Q. What relation was he to you?
A. My father.
Q. Is your father dead or alive?
A. Dead.
Q. When did he die?
A. The 14th of February.
Q. What year?
A. 1911.
Q. Where did you first see him after he died?
A. County morgue.
Q. What happened then?
A. Why, they asked me to identify the body.
Q. Did you?
A. Yes, sir.
Q. As your father?
A. Yes, sir.
Q. Did you live with your father?
A. Yes, sir.
Q. How many years?
A. Since I was born.
Q. Do you know his habits as to drinking coffee and tea?
A. Yes, sir.
Q. How many cups of coffee on an average do you think that he would drink a day since you have known him?
A. Well, about five cups a day.
Q. Of what?
A. Coffee. He would drink two in the morning. At noon I don't know what he drank, and he would drink a glass of beer, I guess with dinner, and generally at supper and generally a cup before he would go to bed.
Q. Do you know whether your father had all his limbs on his body when he died.
A. They took his leg off.
Q. When?

A. Before he died. Three days before he died. I remember they took his lef off and he died on Tuesday.

Q. Do you know of what?

A. Well, poisoning set in.

Q. But he died a natural death, didn't he?

A. No, he died of injuries, so far as I know.

CROSS-EXAMINATION.

BY MR. HULBERT:

Q. Who have you talked to about this case before you came here to testify?

A. Some gentleman over to the house asked me if I would come over and give my testimony, that is all.

Q. Do you know who he was?

A. No, I do not.

Q. What did he say to you about what you were to testify?

A. He just asked me to testify how many cups of coffee my father drank and I told him just the same as I told here now.

Q. Is that man in the room now?

A. No, he is not.

Q. Who told you to testify?

A. He didn't tell me to testify. He asked me if I would testify.

Q. He asked you if you would testify?

A. Yes, if I would testify, yes sir.

Q. Did he suggest to you how many cups of coffee your father drank?

A. No, he did not.

Q. Are you married?

A. No sir.

Q. Been living with your father at this address here?

A. Yes, sir.

Q. Now, what time in the morning did your father leave the house?

A. About six o'clock.

Q. What time would you leave?

A. Well, I would leave about a quarter to six or five-thirty.

Q. Did you always have breakfast with your father?

A. Yes, sir.

Q. You always had breakfast with your father?

A. Yes, sir.

Q. And you particular pains to notice how many cups of coffee he drank?

A. Well, him and I took two cups of coffee in the morning for breakfast and two cups of coffee for supper,

and I took a cup of coffee gnerally before I would go to bed, and he would take a cup of coffee, too. We are in the habit of taking a cup of coffee in the evening before going to bed.

Q. You took particular pains during the last five or six years to see and notice how many cups of coffee your father drank?

A. Well, I didn't just take pains, but I seen the way we drink together. I generally take two cups of coffee or three cups of coffee in the morning, yes sir, and at noon I take a cup of coffee, and at night generally two cups of coffee for supper—sometimes three, and we drink a cup of coffee before we go to bed.

Q. What kind of coffee did you drink at the house?

A. Medium.

Q. Not very strong?

A. Generally use good coffee at the house, not very strong. About medium.

Q. You use cream in it?

A. He drank it black?

Q. He drank it black?

A. I used cream in mine.

Q. Altogether you would say he drank about four cups of coffee a day?

A. Well, about five cups of coffee a day.

Q. Five?

A. At least.

PAUL EISERMAN.

Subscribed and sworn to before me this 3rd day of March, 1911.

Marke A. Foote, U. S. Commissioner.

(SEAL.)

PETER PICCHI,

called as a witness on behalf of the claimant, was duly sworn and testified as follows through a sworn Italian interpreter:

DIRECT EXAMINATION.

BY MR. HIRSCH:

Q. What is your name?

A. Peter Picchi.

Q. Where do you live?

A. Live in Peoria.

Q. Illinois?

A. Yes sir. Don't you know that?

Q. Did you know Giovan Batista Capatelli?

A. Yes, sir.

Q. How long have you known him?

A. I have known him eighteen or nineteen years.

Q. Is he dead or alive?
A. Now he is dead.
Q. When did he die?
A. He died on the 16th day of February.
Q. What year?
A. He died this year.
Q. Where?
A. In South Holland. When I saw him he was dead, but they told me he had died at South Holland, Illinois.
Q. Where did you see him after he was dead?
A. I saw him at the hospital.
It is agreed that the witness means the Cook County morgue, Cook county, Illinois.
Q. Do you know whether or not you pointed out the body of Capatelli at the County morgue?
The Interpreter: I asked him if at the time he see the body at the morgue, if they asked him if he knew this dead man, and he said that is Capatelli, he knew, because was related to him, and he identified him.
Q. What relation were you to Capatelli?
A. I married his sister.
A. We are brother-in-laws. Then he turned around and married my sister for spite.
Q. How long have you been in this country?
A. I am in the United States, it will be two years the 15th day of this coming May.
Q. Where were you born?
A. I was born in Serentino, Province of Rome, Italy.
Q Where was Capatelli born?
A. Capatelli was born at Serentino, the same place.
Q. Did you know Capatelli in the old country?
A. Yes sir.
Q. When did Capatelli come to America?
A. He came here on the 24th of March.
Q. And how old was Capatelli when he died?
A. I could not say exactly. Between thirty-four and thirty-five years.
Q. What year did Capatelli come to America in?
A. Capatelli came here last year in March. It makes a year the 24th of this month that he came to this country.
Q. Do you know the habits of Capatelli as to whether or not he drank tea of coffee?
A. You mean in Italy or here?
Q. In Italy?
A. In Italy we drink wine.
Q. Do you know whether or not Capatelli drank tea of coffee in Italy?
A. No, sir. He means he don't drink coffee. They

drink wine.

Q. Do you know whether Capatelli drank tea or coffee in Italy? Answer yes or no.

A. No, sir. When Capatelli got up mornings he used to drink wine.

Q. What did Capatelli drink in Italy?

A. All that Capatelli would drink was water and wine, that is all.

CROSS-EXAMINATION.

BY MR. HULBERT:

Q. Did Capatelli live with you in this country?

A. Yes, sir.

Q. How long did you know him in Italy?

A. I would say from eighteen to nineteen years.

Q. And during that time all he drank was wine and water?

A. When he could not get wine he drank water, and when there was wine he drank the wine. He didn't drink the water.

his
PETER × PICCHI
mark

Subscribed and sworn to before me this 3rd day of March, 1911.

MARK A. FOOTE,
U. S. Commissioner.

(Seal)

Witnesses to mark:
Bernard P. Barasa.
M. P. Griner.

PETER PICCHI,

recalled, testified as follows:

DIRECT EXAMINATION,

BY MR. HIRSCH:

Q. Do you know what Capatelli drank in America?

A. He used to dring a cup of coffee in the morning and outside of that he would drink beer or water or whatever —

CROSS-EXAMINATION.

BY MR. HULBERT:

Q. Did Capatelli live at your house in this country?

A. Yes sir, the first time we were living at Terra Cotta.

Q. How long did you live in the same house in this country?

A. Capatelli came to this country on the 24th of March.

Q. How many months did you live together in the same house in this country?

A. We lived together from the 24th of March until the 20th of May, at Terra Cotta; then I went to work for the Nortwestern, and I put in the month of June there; then from that time until November, I don't remember exactly whether it was the 21st or 20th of November last—up to that time I was with Capatelli.

Q. From November until he died?

A. He put in one month in June with the Northwestern and then he put in all the following months.

Q. July to November?

A. July to November, with Capatelli.

Q. Living in the same house from July to November?

A. Yes sir; they were living here in railroad camps out in the country.

Q. And you were working on the railroad together all that time?

A. Yes, sir.

Q. And did you eat at the same table with him all that time.

A. We were together; he would eat what I ate and I ate what he ate.

Q. And he would drink one cup of coffee in the morning there every day that you saw him?

A. He used to drink a cup of coffee every morning. I used to drink a cup of coffee too.

Q. And that is all the coffee he drank?

A. Yes, sir; he didn't drink any more coffee.

his
PETER × PICCHI
mark

Subscribed and sworn to before me this 3rd day of March, A. D., 1911.

MARK A. FOOTE,
U. S. Commissioner.

(Seal)

Witnesses to mark:
Bernard P. Barasa.
M .P. Griner.

GIOVAN BATISTA DI PALMA,
called as a witness on behalf of the claimant, was duly sworn and testified through an interpreter as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Have you been sworn?

A. Yes, sir.

Q. What is your name?

A. Giovan Batista Di Palma.

Q. Where do you live?
A. Peoria.
Q. Illinois?
A. Yes, sir.
Q. How old are you?
A. Thirty.
Q. Did you know Giovan Batista Capatelli?
A. Yes, sir.
Q. Hom long had you known him?
A. From the time we were boys.
Q. Is he dead or alive?
A. Dead.
Q. How long have you been in America?
A. I am here in the United States about nine or ten months.
Q. Did you know Capatelli in Italy?
A. Yes, sir.
Q. Where were you born, in Italy?
A. Serentino.
Q. Is that the same place Capatelli was born?
A. Yes, sir.
Q. What beverages did Capatelli drink in Italy?
A. Wine.
Q. Anything else?
A. That is all.
Q. Do you know whether or not he drank tea or coffee?
A. I know that he didn't drink tea or coffee.

CROSS EXAMINATION,

BY MR. HULBERT:

Q. Do you know of what Capatelli died?
A. No sir.
Q. Did he ever drink wine in Italy to excess?
A. He would drink abastanza. That means enough or all that was necessary for to live.
Q. But not enough to get drunk?
A. No sir.
Q. What kind of wine did he drink?
A. Wine from grapes.
Q. Do you know the name of the wine?
A. They always make wine from grapes, and they make the same wine and they don't give it any name, simply grape juice, that is all.

His
GIOVAN BATISTA × DI PALMA.
Mark.

Subscribed and sworn to before me
this 3rd day of March, 1911.
(SEAL) Mark A. Foote, U. S. Commissioner.
Witness to mark:
Bernard E. Barasa
M. F. Criner.

CUONO NUZZO,

called as a witness on behalf of the claimant, was first duly sworn, and testified through an interpreter, as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your name?
A. Cuono Nuzzo.
Q. Where do you live?
A. 1107 Vernor Park Place.
Q. How old are you?
A. 31.
Q. Do you know Pasquali La Ventura?
A. Yes sir.
Q. Is he dead or alive?
A. Dead.
Q. When did he die?
A. The 3rd of last month.
Q. Where did he die?
A. On Pope Street.
Q. How long have you known Ventura?
A. When he was born.
Q. When he was born?
A. Yes sir.
Q. How long have you been in America?
A. Six years.
Q. Where were you born?
A. I born 1880.
Q. Where were you born, in what country?
A. Italy.
Q. In what part of Italy?
A. Acera, Province of Caserta.
Q. Where was La Ventura born?
A. At Acera.
Q. The same place that you were born?
A. Yes sir.
Q. How old was La Ventura when he died?
A. 22 years old.
Q. Do you know how long Ventura was in this country?
A. Yes sir.
Q. How long?

A. I can't explain to you in English, but I wish you, Mr. Interpreter, would tell them that I—When I first came from Italy I went to work; when I came to this country this man Ventura was then living in Chicago, and I met him here; I don't know just precisely what date La Ventura arrived in this country, but I know that when I came here to Chicago some three years ago the man was here.

Q. How long did Ventura—how long did you know Ventura in Italy?

A. I know him from the time he was born.

Q. How long; how many years?

A. It was eighteen or nineteen years in Italy that I knew him there.

Q. Are you related to Ventura?

A. Yes sir.

Q. In what way?

A. His mother was my cousin.

Q Have you ever been in the County Morgue in Chicago?

A. Yes sir.

Q. When was the first time you saw La Ventura after he was dead?

A. The very day that he died.

Q. Where?

A. At the hospital.

Q. Was he at the morgue?

A. At the time I saw him I saw him at the hospital; they had not brought him to the house where they keep the dead people, that is the morgue—but I saw him that very night that he died.

Q. Did you ever see him at the morgue?

A. Yes; I saw him there.

Q. When?

A. At the night time I saw him when I went to the hospital. He was dead; the next morning I went to bring him or take him back to the house, to his home or where he had been living; and then I got him from the county morgue—from the place where they keep the dead people.

Q. Do you know whether or not an inquest was held over the body of Ventura?

A. No sir.

Q. Were you asked to identify the body of Ventura?

A. No; Ventura? Yes.

Q. Where?

A. At the hospital.

Q. Did you identify the body of Ventura at the hospital?

A. Yes, sir.

Q. Do you know the meaning of the word "inquest?"

A. I don't know what that means.

Q. What did Ventura drink in Italy?

A. Water and wine.

Q. Do you know whether he drank tea or coffee in Italy?

A. Yes; I know; because I know that he didn't drink.

Q. Did he drink tea or coffee in Italy?

A. No, sir.

Q. Is there any class of people in Italy who drink tea or coffee?

A. Yes, sir.

Q. What class?

A. The people more noble than we; the nobility he means—higher class.

Q. Are you of the same class of people who drink tea or coffee in Italy?

A. No, sir.

Q. Is Ventura?

A. No, sir.

CROSS EXAMINATION.

BY MR. HULBERT:

Q. Did you talk to anybody about your testimony before you come here?

A. No, sir.

Q. How did you happen to come here to testify?

A. I came here to say whether he drank tea or coffee; or what he did.

Q. Who asked you to come here?

A. This man (indicating Faverula.)

Q. When he asked you to come here did he tell you that you would be called upon to testify that La Ventura did not drink tea nor coffee?

A. I was told to come here to explain what he did and what he ate, and so on, and what he did.

Q. When you say you identified his body before the morgue or at the morgue, what do you mean?

A. To identify; I understand that they wanted to know from me the information about this man as to what he did and where he lived and what he ate, and what he drank and such things as that.

Q. You were not present at the time they held the inquest over his body?

A. I was not there; only at the hospital.

RE-DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. Look at the faces in this room and see whether or not you recognize anybody that you saw at the hospital?

A. This man here (indicating S. L. Davis, Deputy Coroner).

Q. Anybody else?

A. I know this man, he is a doctor; he was there (indicating Dr. W. H. Hunger).

Q. Do you remember whether or not you told these two gentlemen that you have just pointed to, Dr. Hunger, and Mr. Davis, whether or not that was the body of Pasquali La Ventura?

A. I said it to this man here (indicating Mr. Davis).

CUONO NUZZO.

Subscribed and sworn to before me, this 3rd day of March, A. D., 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

MIKE LA VENTURA,

called as a witness on behalf of the claimant, was duly cautioned and sworn and testifie through an interpreter, as follows:

DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. What is your name?

A. Mike La Ventura.

Q. Do you know Pasquali La Ventura?

A. He is my brother. I ought to know him.

Q. Is he dead or alive?

A. Now he is dead.

Q. When did he die?

A. The 3rd of February.

Q. Where do you live?

A. 1047 Polk Street.

Q. What city?

A. Here in Chicago.

Q. How long have you been in America?

A. I left Italy last year on the 26th of February.

Q. Do you know how long Ventura, your brother, had been in America?

A. He was here six years.

Q. Where were you born?

A. I was born in Acera.

Q. Italy?

A. Italy, yes sir.

Q. Where was your brother Pasquali La Ventura born?

A. In the same place.
Q. How old was he when he died?
A. Twenty-two years.
Q. What did your brother La Ventura drink in Italy?
A. In our condition of life we drink nothing but wine or water.
Q. What do you mean by that; by your condition of life?
A. That is of the poorer class of Italians, the peasantry and we cannot get those things.
Q. Do you know what La Ventura drank in Italy?
A. He would drink simply wine and water.
Q. Do you know whether or not he ever drank tea or coffee?
A. He never used tea or coffee in Italy.
Q. Do you know whether or not Ventura ever used tea or coffee in Italy?
A. No; he never used it.
Q. When was the first time that you saw the body of your brother after he was killed?
A. I only saw him the last day and that was the day—I saw him on the day that they brought him to the burying ground; the last day when he was in his coffin.
Q. Was that the first time that you had seen him after he was killed?
A. That was the only time—the only time I saw him after.
Q. Is there any class of people in Italy who do drink coffee or tea?
A. Yes; there are. They are the people of the higher—the gentlemen or the gentry and the higher class of people in Italy.
Q. Are you of that class?
A. No.
Q. Was your brother Pasquali La Ventura, who is dead?
A. No, sir.

CROSS EXAMINATION

BY MR. HULBERT:

Q. Did your brother ever drink tea or coffee in this country?
A. Chicago; he used to drink some—he doesn't answer just what it was he drank.
Q. Answer just what he drank?
A. He drank some—the way he puts it about once a week.
Q. Did he ever drink any coffee in Chicago?

A. Yes, sir; he used to drink it sometimes when he was here.

Q. How early in life did he begin to drink wine and water in Italy?

A. Along about ten years old.

Q. Did he ever drink to excess?

A. He never drank to excess; he drank every now and then.

LA VENTURA MIKE.

Subscribed and sworn to before me, this 3rd day of March, A. D., 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

PASQUALI DI ORIO,

called as a witness on behalf of the claimant, was first duly sworn, and testified as follows:

DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. What is your name?

A. Pasquali Di Orio.

Q. Where do you live?

A. 1047 West Polk Street.

Q. Chicago?

A. Yes, sir.

Q. Did you know Pasquali La Ventura?

A. Yes, sir. Certainly I know him.

Q. Do you know where he lived in Chicago?

A. He lived in my home.

Q. How long did he live there?

A. Two years.

Q. Do you know what Pasquali La Venutra drank during the time he was living at your house?

A. Sometimes he drank a glass of beer and sometimes he took a cup of coffee every week.

Q. No more?

A. No; that is all I know.

Q. Anything else did he drink?

A. That is all he drank.

CROSS EXAMINATION
BY MR. HULBERT:

Q. Did you eat your meals with him all that time, those two years?

A. I eat all the time with him.

Q. Every morning and every night.

A. All the morning and every night.

Q. And you had beer in your house?

A. Buy it downstairs.
Q. Bring it into your house?
A. Bring it into the house by the pail.
Q. In a pail?
A. Yes, sir.
Q. What kind of coffee did you drink?
A. I don't know what kind of coffee that was, he bought coffee anyway.
Q. You know how much he paid a pound for the coffee?
A. My brother bought coffee.
Q. You don't know, do you, how much he paid?
A. I don't know.
Q. Did you drink coffee yourself?
A. No, sir.
Q. Do you know whether or not the coffee he drank was strong or weak?
A. O, not very strong.
Q. Not very strong?
A. No.
Q. Did he ever drink any tea?
A. No tea at all.
Q. He never drank tea?
A. No.
Q. And he never drank more than one cup of coffee a week?
A. A week, sometime; sometimes he didn't drink at all.
Q. Sometimes he would go two or three weeks without drinking any coffee at all?
A. Yes, sir.
Q. And sometimes he would go pretty near a month without drinking coffee at all?
A. Sometimes.

PASQUALI DI ORIO.

Subscribed and sworn to before me, this 3rd day of March, A. D., 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

JIM DI ORIO,

called as a witness on behalf of the claimant, was duly sworn and testified as follows:

DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. Where do you live?
A. 3047 Polk Street.
Q. In what city is Polk Street.
A. Chicago.

Q. How old are you?
A. 36 years.
Q. How long have you been in this country?
A. I am in this country six years. Four years in New York and two years in Chicago.
Q. Where were you born?
A. Acera, Italy.
Q. Did you know Pasquali La Ventura?
A. I know him from this country. I didn't know him at all in Italy.
Q. That is all.
(No cross examination.)

DR. WARREN H. HUNTER,
called as a witness on behalf of the claimant, was duly sworn and testified as follows.

DIRECT EXAMINATION.
BY MR. HIRSCH:

Q. What is your name?
A. Warren H. Hunter.
Q. What is your occupation?
A. Physician.
Q. Do you do any work outside of a general character?
A. I am the Coroner's physician.
Q. Do you hold any other office—salaried office?
A. No.
Q. Are you a deputy coroner?
A. Yes, sir.
Q. Doctor, what are your duties as deputy coroner and coroner's physician?
A. I examine all bodies to ascertain the cause of death.
Q. I will ask you whether or not you held a post mortem examination over the body of Stefinia Porembor at 1722 Wabash Avenue, Chicago?
A. Yes, sir.
Q. Do you remember when?
A. I will have to refer to minutes to refresh my recollection. It was on Sunday. I don't know the date. (Referring to memoranda.)
Q. To what minutes are you referring?
A. I am referring to the Coroner's minutes and mine. That is my own minutes. I can state in a general way as to the cause of death without referring to them, as a matter of fact. I haven't got my statement of fact here for some reason or other. It should be here.
Q. Do you remember whether or not it was in Febru-

ary?

A. Yes, sir; it was in February.

Q. Do you remember whether it was in the early part or the latter part of February?

A. It was in the early part of February.

Q. Was any one present when you held that post mortem examination?

A. Yes, sir.

Q. Who?

A. Doctor Le Court.

Q. What are his initials?

A. B. R.

Q. Where does he live, what city?

A. Chicago, Illinois.

Q. Is he a practising physician?

A. No.

Q. What does he do?

A. He is associated with the chair of pathology in Rush Medical College.

Q. What was the cause of death of Stefinia Porembor?

A. A gun shot wound of the body.

Q. Doctor, in the course of your duties as Coroner's physician, do you remember whether or not you held a post mortem examination over the body of Giovan Batista Capatelli?

A. Yes, sir.

Q. Where?

A. County morgue.

Q. Do you remember what month that was in?

A. February, I believe.

Q. Do you remember whether or not it was since January 1st, 1911?

A. Yes, sir.

Q. Well, was it?

A. It was, yes, sir.

Q. Was anybody else there when you held this post mortem examination?

A. Yes, sir.

Q. Who?

A. Mr. Davis, the deputy coroner, Doctor Hektoen and Doctor Le Count.

Q. Who is Doctor Hektoen, what are his initials?

A. Doctor Ludwig Hektoen.

Q. Is he a practicing physician?

A. No, sir.

Q. What does he do?

A. He is head of the pathological department of the Rush Medical College.

Q. Do you remember the cause of death of Capatelli?
A. The cause of death that I gave in my statement was shock and hemorrhage due to external violence. I don't recollect whether he was shot or stabbed. It was one or the other.
Q. Now, Doctor, in carrying out your duties as coroner's physician, did you hold a post mortem examination over the body of Pasquali La Ventura?
A. Yes, sir.
Q. Was that since January 1st, 1911?
A. Yes, sir.
Q. Was any one present when you made that examination?
A. Yes, sir.
Q. Who?
A. Mr. Davis, Doctor Hektoen and Doctor Le Count.
Q. Where does Doctor Hektoen live?
A. He is in —
Q. I mean what city?
A. Chicago, Illinois.
Q. The Doctor Hektoen and Doctor Le Count that you have just referred to are they the same gentlemen that you have referred to here before?
A. Yes, sir.
Q. Do you remember the cause of death of Ventura?
A. That was shock and hemorrhage due to external violence.
Q. Now, Doctor, I will ask you whether or not in carrying out your duties as coroner's physician, whether or not you held the post mortem examination over the body of Dan Cummings?
A. Yes, sir.
Q. Do you remember when that was held, about the time?
A. That was before January 1st. I don't recall the date.
Q. Was it before September, 1910?
A. It was along in there some place.
Q. Was anyone present when you held that examination?
Q. Who?
A. Mr. Davis and Doctor Le Count and myself.
Q. It is the same Doctor Le Count that you referred to heretofore?
A. Yes, sir.
Q. What was the cause of death of Dan Cummings?
A. Shock and hemorrhage following gun shot wound in the body.

Q. In the line of your duties, as coroner's physician, did you hold a post mortem examination over the body of Rheinholt Eisermann?

A. Yes, sir.

Q. Do you remember about when?

A. No, I will have to refresh my memory on that. It was about —

Q. Was it since January 1st, 1911?

A. Yes, sir.

Q. Where did you hold that post mortem?

A. County morgue.

Q. Was any one present when you held that post?

A. Yes, sir.

Q. Who?

A. Mr. Davis and Doctor Hektoen and Doctor Le Count.

Q. Are these the same gentlement that you have heretofore referred to?

A. Yes, sir.

Q. I will ask you, Doctor, whether or not in carrying on your duty as coroner's physician, you held a post mortem examination over the body of William Mangold?

A. Yes, sir.

Q. Was any one present besides yourself?

A. Yes, sir.

Q. Who was it?

A. Mr. Davis, Doctor Hektoen, Doctor Le Count.

Q. These are the same gentlemen that you have heretofore referred to?

A. Yes, sir.

CROSS EXAMINATION
BY MR. HULBERT:

Q. Doctor, when you made the post mortem examination of the body of Stefinia Porembor, what did you do?

A. Opened the head and all the cavities of the body.

Q. Where was she shot? Where did the bullet enter her body?

A. I will have to refer to the notes (referring to memoranda.)

Q. Where was she shot?

A. I cannot give you the exact locality of the bullet wound in this case, because my notes have not been incorporated here in the inquest. My recollection is that she was shot through the heart?

Q. Why did you open the head?

A. It is a regular proceduré in all murder cases. It makes a complete post mortem.

Q. Are you under subpœna to testify in this case at a District Court in Chattanooga?

A. No, sir.

Q. What did you find in her head with reference to the structure?

A. A normal brain.

Q. A normal brain and in good condition?

A. Yes, sir.

Q. And with reference to her heart as to structure, what did you find?

A. Normal.

Q. Any degeneration?

A. None that I can recall.

Q. What other organs of her body did you open?

A. All of them.

Q. Did you find any symptoms of degeneration in her stomach?

A. Not that I can recall, no.

Q. There might have been, however?

A. I don't believe so.

Q. Did you find any symptoms of degeneration in any of the organs of her body that you can recall at this time?

A. No, I cannot recall those details without my notes.

Q. But there might have been without your being able to recall it?

A. Possibly.

Q. And without your notes being able to show that?

A. Well —

Q. In other words, your post mortem is not done for that purpose, to find out whether there is any structural degeneration or not, is that right?

A. Oh, no. It is done for that purpose, as well.

Q. I notice from your direct examination that Doctors Le Count and Hektoen were present at all of these post mortem examinations about which you testified, Doctor Hektoen being absent from only one. How does it happen that these parties were present at each one of these examinations, do you know?

A. They came at my request.

Q. Did you know before you notified them that there was something about these bodies that would be useful in this case?

A. Not particularly in this case. We do it quite frequently. We are all associated together in the same school.

Q. Well, at the time that you were holding these inquests, were you and the other two doctors, Doctor Hektoen and Doctor Le Count, making particular search to

find out as to whether or not there was any structural degeneration of these bodies?

A. Yes, sir.

Q. Or was it a general inquest?

A. A general, careful inquest

Q. But not directly to that particular phase of the matter?

A. It was directed to find out any degenerations whatever.

Q. Well, as an ordinary thing, do you examine, after a person is shown to have died from a gun shot, do you examine all the other organs of the body to find out whether or not there is structural degeneration of those other organs?

A. Yes, sir.

Q. You are not satisfied with the evidence of death from a gun shot wound, but you open all the other organs of the body for all other purposes, is that right?

A. The mere fact that an individual is shot is not accepted in a criminal court as sufficient evidence of death, even if it had penetrated a vital organ.

Q. Well, I know that, and for that reason you go through all the other organs?

A. Always.

Q. And did you find structural degeneration in the body of Capatelli?

A. Capatelli's organs are being run through a miscroscopical process now as to whether there are any structural changes.

Q. For what purpose?

A. For my own satisfaction.

Q. Has anybody asked you to do that with reference to this particular case?

A. Not particularly, no.

Q. Well, who has spoken to you about that?

A. Mr. Hirsch.

Q. And you are looking for that particular degeneration for what purpose?

A. Well, I say, we were looking for that particular purpose. We were looking to see what we could find.

Q. And that information which you are seeking is not for the Cook County records of the State of Illinois, but that is a matter of opinion, is that right?

A. That is for my own personal use.

Q. And also to inform you so that you may testify in the particular case some other day?

A. To use as I see fit.

Q. Now, did you find any particular degeneration of

the body of this La Ventura?

A. The same answer in regard to the previous case would have to be made, because those specimens are going through.

Q. All those specimens both of these two cases?

A. Yes, sir.

Q. And all your answers as to both bodies would be the same?

A. You might make it in regard to these five or six.

Q. As far as the post mortem examinations are concerned and the records for the coroner of Cook County, your examination is complete and your report is in, is that right?

A. Yes, sir.

Q. Were those bodies buried before you took these samples for miscroscopical examination?

A. Oh, no.

Q. You took them at the time you made the inquest?

A. Yes, sir.

Q. And why did you take them at that time?

A. For my own personal benefit.

Q. Do you do that in every case?

A. When I see fit.

Q. But at that time had you been requested by any one to take these samples so that you could post yourself upon this particular case?

A. No.

Q. Now, as to the body of Dan Cummings, what did you find in his body as to structural degeneration?

A. That comes under the same category.

Q. Same category?

A. Yes, sir.

Q. And the body of Mr. Eisermann?

A. Same thing.

Q. And Mangold?

A. Same thing.

Q. And the samples of their bodies are not being put through a miscroscopical examination?

A. Yes, sir.

Q. Were these bodies turned over to their relatives?

A. Yes, sir.

Q. Were the samples taken by you before or after that time?

A. Before they were turned over.

Q. Doctor, when you make an examination of the organs of an individual, can you ordinarily tell from that examination whether or not that particular individual has been a user of intoxicating liquors?

A. Frequently you can.
Q. But not invariably?
A. No.
Q. And could you tell whether or not he was a user of coffee, for instance?
A. You mean for a microscopical examination?
Q. Yes.
A. Simply looking at it?
Q. Yes.
A. You might and might not.
Q. But you can't be sure of that from your examination?
A. No.
Q. From a post mortem examination which you made can you tell whether or not the individual was a user of coffee?
A. From the ordinary post mortem, I should say no.
Q. Have you completed your microscopical examination of the body of any of these people that you mentioned?
A. No.
Q. And from the examination which you have so far made are you able to state whether or not, from your examination alone, those people were or were not users of coffee?
A. I don't know anything about it.
Q. Are you as a general rule able to tell from a general post mortem examination as to whether or not the person whose body you are examining was a user of tea?
A. No.
Q. And are you able to state or are you able to tell whether or not from a microscopical examination such as you are making in these cases, whether or not the body of a person you are examining showed that the individual had used tea?
A. No, that is a pretty general question, you know.
Q. Well, then, you mean there are times when you can't tell if an individual has been a user of tea, or you mean you cannot from a structural examination?
A. Depending entirely on the quantity that they might use, yes, sir.
Q. Have you found from your examination as to whether or not this Porembor woman ever used tea or coffee?
A. Those organs are in the same process.
Q. Your examination is not complete?
A. No.
Q. Is it complete in any of those cases?
A. No, sir.

Q. Not at this time?
A. No, sir.

RE-DIRECT EXAMINATION.

BY MR. HIRSCH:

Q. Doctor, have you been requested to go to Chattanooga to testify in this case?
A. No, sir.
Q. Do you expect to go?
A. No.

WARREN H. HUNTER, M. D.

Subscribed and sworn to before me, this 3rd day of March, 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

It is agreed that this testimony is taken under the general stipulation which counsel for the Government and the claimant have heretofore made and that objections to the admissibility of any testimony may be made at the trial concerning its relevancy, materiality and competency and general admissibility excepting as to leading or form of question.

It is further understood that counsel for the Government has not had an opportunity to interview any of the witnesses offered by the claimant, except Doctor Warren H. Hunter, at the taking of these depositions, although counsel for the Government has made a request upon Mr. Milton M. Hirsch for the addresses of these witnesses prior to the taking of these depositions.

It is also understood that Mr. Hirsch offered to outline to counsel for the Government the nature of the testimony, and that the counsel did not take advantage of Mr. Hirsch's offer to confer with him.

It is further understood that Mr. Hirsch did not know the names of at least two of his witnesses until last night after ten o'clock, to wit; Mike La Ventura and Pasquali Di Orio.

The further taking of testimony herein is conducted for the taking of the testimony of Mrs. Cummings.

March 7th, 1911., 10:15 o'clock A. M.

Parties met before Commissioner Foote pursuant to adjournment and agreement. Present as before.

MRS. SUSAN CUMMINGS,

produced as a witness on behalf of the claimant, was duly sworn and testified as follows:

DIRECT EXAMINATION.

BY MR. HIRSCH:

Q. What is your name?
A. Mrs. Susan Cummings.
Q. Where do you live?
A. 1015 Olive Street.
Q. Chicago?
A. Illinois.
Q. How long have you lived in Chicago, Mrs. Cummings?
A. About eighteen years.
Q. Did you know Dan Cummings?
A. Yes, sir.
Q. Is he dead or alive?
A. Dead.
Q. Was he any relation to you?
A. My husband.
Q. When did he die?
A. 17th day of August.
Q. What year?
A. 1910.
Q. Where was he employed?
A. Cook County hospital.
Q. Mrs. Cummings, did you know the habits of your husband Dan Cummings as to drinking coffee and tea?
A. Yes, sir.
Q. How long have you been married?
A. 12 years the fourth of July last.
Q. All the time to Dan Cummings who is dead?
A. Yes, sir.
Q. Will you state what were his habits as to drinking coffee and tea during the time that you were married?
A. Well, each morning he had a cup of coffee for his breakfast and at night he usually had a cup of tea.
Q. And that took place during the entire time you were married?
A. Yes, sir; unless on rare occasions that he would not be home, but that was very rare.
Q. Mrs. Cummings, do you know the cause of his death?
A. Yes, sir.
Q. What was it?
A. He was shot.
Q. What was the condition of his health before he died —before he was shot?
A. Perfect, to my knowledge.

CROSS EXAMINATION
BY MR. HULBERT:

Q. He never drank more than one cup of coffee in the morning?

A. Very seldom. Now, I limited it to the —

Q. And one cup at night?

A. Very seldom. On very rare occasions he might take one cup more, but I limited it to the one because I am sure of the one.

Q. And that habit extended over the twelve years of your married life?

A. Yes, sir.

Q. What kind of coffee was it, do you know?

A. Well I never paid very much attention because he would bring it from down town. He was down town to his business. His business would take him down town.

Q. He ordered the coffee?

A. He ordered the coffee, yes sir, and had it sent home.

Q. Do you know whether the coffee was strong or weak?

A. Well, he liked it pretty strong—medium.

Q. Medium?

A. Yes sir —

Q. And the tea?

A. Same way.

Q. Was it black or green tea?

A. Green tea.

Q. And he drank it medium?

A. Yes, sir.

SUSAN CUMMINGS.

Subscribed and sworn to before me this 7th day of March, 1911.

Mark A. Foote, U. S. Commissioner.

(SEAL.)

Whereupon, at 2 o'clock P. M., Court adjourned until Tuesday morning, March 28th, 1911, at 9 o'clock.

Chattanooga, Tennessee,
Tuesday, March 28, 1911,
Nine o'clock A. M.

Court met pursuant to adjournment.

Appearances: Same as before.

CLAIMANT'S EVIDENCE CONTINUED.

The Court: My attention has been called to the fact that this is Election Day in the City of Chattanooga; counsel on both sides have mentioned the matter to me and have

stated a number of the jurors are anxious for an earlier adjournment in order that they may take part in the election, and other persons who were summoned as witnesses. I think it is entirely proper that every good citizen should have an opportunity to express his sentiments and the Court will therefore adjourn at twelve-thirty o'clock today. We will hold one continuous session.

Mr. Miller: I would like to have the copy that I was to be furnished with. I would like to inquire if you have that copy for me.

Mr. Sizer: I suppose the paper you refer to is the exhibit to Doctor Vaughan's testimony.

Mr. Miller: In part.

Mr. Sizer: Doctor Vaughan was asked on his cross-examination to file a list of authorities which recommended the use of caffeine-containing beverages as articles of diet. He has prepared that list and we desire to file it as an exhibit to his testimony and read it into the record.

The Court: Very well.

Mr. Sizer: The list includes the following authorities:

Bunge's Physiological Chemistry.

Sherman's Chemistry of Food and Nutrition. See especially page 212.

Chittenden on the Nutrition of Man.

Hewitt. Coffee, Its History, Cultivation and Uses.

Hutchinson on Foods.

Pavy. Foods and Dietetics.

Chevallier. French Annals of Hygiene, Vol. 17, page 1.

Schutze on Coffee, Tea and Chocolate, German Quarterly of Legal Medicine, Vol. 17, page 188.

Mr. Miller: As this is the first time that we have had that list and Doctor Vaughn is still here, I would like to have an opportunity of enjoying the same courtesy that was granted to opposite counsel. I do not know that they will grant it — we would like to take these authorities after adjournment and look them over and if there is anything that we desire to recall Doctor Vaughan in regard to we will wish to do that.

The Court: You may have time to look the list over. I am satisfied counsel will agree to that.

Mr. Sizer: That will be all right.

Mr. Miller: On pages 1887 and 1888 on yesterday we note that Doctor Vaughan was asked this question, as the stenographer reports it, and while no stenographer, perhaps, is perfectly accurate I think the ones we have here are as nearly perfect as any that I have ever seen. This report reads as follows: "Is caffeine, as made in beverages" — is the way it is reported — "does the use of it re-

sult in any serious impairment to the health of the person using it"?

His answer was: "It does not."

Mr. Sizer: Well, that word there may be wrong ——

Mr. Miller: As Mr. Sizer suggests, it may be wrong — but I move to exclude it because it calls for a conclusion pure and simple, without stating the facts ——

The Court: Is the Doctor still here? If he is still here I will sustain the motion, but if he is gone I will overrule the motion on the ground that it comes too late and that there were no objections made to it at the time.

Mr. Miller: I believe it is conceded that as it is written here it is not correct.

The Court: It may be corrected if it is not correct.

Mr. Sizer: He used the word "made" instead of "found."

The Court: That may be changed.

Mr. Miller: I do not agree to any change in it.

Mr. Sizer: It may remain as it is. I do not insist on any change.

Mr. Miller: That is all for the present.

The Court: We will proceed with the case on trial. I have examined the articles referred to in the cross-examination of Doctor Wesener, which were handed to me, one article by Doctor William Bullard in Volume 114 of the Boston Medical and Surgical Journal, on page 314, and the other article by Doctor William M. Lesynsky in Volume No. 59 of the Medical Record at page 4; and I am of the opinion that neither of those articles contain a record of any cases of poison or serious or permanent injury from caffeine within the scope of the questions put to that witness on direct examination. Doctor Bullard's article relates to tea and without any attempt to differentiate between the effects of caffeine or any other ingredient of tea and does not refer to caffeine. The article by Doctor Lesynsky refers to coffee, without any differentiation as to the effects of caffeine. Neither of the articles contain, in my opinion, records of cases of poisoning or injury from caffeine in the sense that the question was asked on direct examination and therefore I exclude them from the cross-examination.

Mr. Miller: Well, we wish to note an exception and ask that the articles may be made a part of the record.

The Court: The record may show the articles were offered and excluded.

Mr. Miller: We wish to call Doctor Marshall, if your Honor please, as to one statement he made on yesterday which I had no means of testing him in reference to.

Mr. Sizer: All right, but Doctor Marshall does not seem to be here; he has not come in yet.

Mr. Miller: Well, when he comes we can call him.

DR. E. R. LE COUNT,

the next witness called on behalf of the Claimant and Intervenor, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Please state your name and place of residence.

A. E. R. Le Count; Chicago.

Q. What is your occupation?

A. Physician and teacher.

Q. Teacher of what?

A. Teacher of Pathology in Rush Medical College.

Q. How long have you been so engaged?

A. Nearly twenty years.

Q. Where did you receive your technical education?

A. At that institution, and I had various courses — post-graduate work — at John Hopkins Medical School and several places in Europe. I studied in Berlin one time for nine months. On another occasion I spent a summer in Paris working in the Pasteur Institute.

Q. To what branch of medicine have you given especial attention?

A. Pathology.

Q. What is pathology?

A. Pathology is that part of medicine which has to do with the alterations caused by death and the way in which those alterations were brought about?

Q. Have you written any works on pathology?

A. No, sir, I have not.

Q. How many post-mortem examinations have you made?

A. Several thousand.

Q. What is the object of a post-mortem examination?

A. A post-mortem examination is made to study the changes that are caused by disease and to determine what was the cause of death.

Q. Are you familiar with the appearance of animals ordinarily used in laboratories, both in health and in disease?

A. Fairly so.

Q. Have you in your examination of human bodies after death become acquainted with the changes of structure due to the use of coffee or other caffeine-containing beverages?

A. No, sir.

Q. You heard the depositions read yesterday — the testimony of certain people in Chicago?

A. Yes, sir.

Q. Did you make an examination of these bodies?

A. Yes, sir.

Q. State the nature of your examination and what was the result.

A. I examined all of the organs in the bodies in question. In five of the six cases a microscopical examination was made of the important organs and I was unable to find any alteration that I could attribute to tea and coffee drinking habits of those people who used such beverages.

Q. In making examinations and experiments with animals in the laboratory, I wish you would describe what is necessary with regard to control, and so forth.

A. In all sorts of experiments, not only those which have to do with animals but the studies which have to do with human disease, it is necessary to have what we call a control. That is very easily obtained in the case of animals but in the case of human beings it is more difficult. Still, when it is possible, a control should be secured for the problems that involve human disease just the same as is done with animals.

In the case of controls in connection with animal experiments, the animal should be about the same weight, about the same age, and should be handled to the same degree and fed at the same time. The animal to be experimented on should have the experiment performed on it and the control animal should have everything else possible done to it except that particular test which it is desired to try out and when the animal experimented on is to be killed, or when the experiment reaches conclusions, the examinations then made of the animal experimented upon and the control animal, should be carried out quite identically.

Q. Is the purpose of the control animal to furnish a normal standard by which you can determine the effects of any given substance?

A. Yes, sir; that is the object of it. It is the primal proof that is wanted in all sorts of scientific work.

Q. Have you read the case referred to as the Zenetz case?

A. I have.

Q. From the point of view of pathology, can you say, and if not, why not — that this case resulted in death from taking caffeine?

A. In determining or demonstrating that death is due to caffeine in any given instance, — in the first place it

should be demonstrated that caffeine was taken and to demonstrate that it may be necessary to make two chemical examinations, one of the material taken and the other a chemical examination of the organs of the body involved of the individual who presumably has been poisoned; and the third examination is very necessary. That has to do with excluding all other causes of death. That is usually made by post-mortem examination, that is done carefully and thoroughly. Such methods as I have outlined are very necessary in medico-legal work where it is desired to establish in a legal way that death was brought about by a particular poison.

Mr. Miller: I did not hear that last portion of the answer.

(The last part of the answer was read, as follows: "Such methods as I have outlined are very necessary in medico-legal work where it is desired to establish in a legal way that death was brought about by a particular poison.")

Mr. Miller: If it is conceded that medico-legal work is a legitimate part of this controversy, I do not object to that; otherwise, I move to exclude it.

The Court: The motion is sustained as to what was read.

BY MR. HIRSCH:

Q. Taking up the Zenetz case, what was done and what should have been done to determine the cause of death?

Mr. Miller: I object to that.

Mr. Hirsch: I want to take up the Zenetz case in detail from the point of view of pathology.

Mr. Miller: I object to the form of that question.

The Court: What is the objection to the form of the question?

Mr. Miller: The objection is that it calls purely for a conclusion as to whether the other man did it in a proper way and I submit that is not competent.

The Court: You may ask this witness what this case shows from the standpoint of a pathologist.

BY MR. HIRSCH:

Q. What does this Zenetz case show from a pathologist's point of view?

A. It does not show anything, practically, from a pathological standpoint, because there is mention solely of this: That the heart was examined and found to be hard and to resist cutting with a knife. That is all the report shows that has to do with the gross changes in the body.

Q. Could that be due to caffeine or could it be due to a condition of the heart?

Mr. Miller: Do you express yourself as being competent to speak on that as to the effect this drug would produce physiologically on the heart?

The Witness: With regard to the heart being hard and difficult to cut with a knife?

Mr. Miller: Or any other physiological action.

The Witness: Yes, sir.

Mr. Miller: That is all I wanted to know.

The Witness: I know of no action of the human heart with any drug that would render it difficult to cut with a sharp knife.

BY MR. HIRSCH:

Q. What conditions might have caused it?

A. One condition that might have made the heart difficult to cut with a sharp knife would be the deposit of lime salt that sometimes occurs about the heart in a sac that the heart is contained in. Another condition that might have caused this record, or might have caused the heart to be difficult to cut with a knife, would be the presence of considerable amount of scar tissues in the heart's muscle, a form of disease known as fibrous myocarditis.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. How long was it after death, or do you know how long it was after death of these five persons on whom you held the post-mortems in Chicago before you held the post-mortem, or did you know in the first place how long it was?

A. In one instance I know that the time was relatively short because the body was still warm — body heat was present abundantly and markedly present.

Q. As to the others you do not know?

A. I only know as to the others by hearsay.

Q. Were you assisted in these post-mortem examinations by anybody else?

A. I was present at the examinations as they were conducted by Doctor Hunter, the Coroner's physician, and given opportunity to examine everything I wanted to examine during the course of that examination.

Q. You were apprised in advance of the causes that produced the death of these parties?

A. In one instance — in most instances, the causes were very apparent, like gunshot wound of the head, gunshot wound of the abdomen, skull fracture, etc. I have nothing else to answer on this; that is the complete answer.

Q. Was there a single case in which you were not apprised in advance of the cause of death or where it was not readily apparent from the exterior of the person?

A. There was one instance where the only statement that I know of — and this was also hearsay — was that the individual died suddenly in apparent health while about his usual occupation.

Q. How long is heat retained in the body after death?

A. It depends on a good many factors. The mode of death, whether due to violence or whether it is due to disease, and the place where the body is kept and the time of the year, and such things as that.

Q. Of course, the object of that question is to ascertain how long this particular body that you say there was some heat or warmth in that you held the post-mortem on had been exposed or the length of time that had expired after death, and I am trying to get at that fact. Now, when you say a relatively short time, I want to know what you know as to these exterior conditions; that is, as to where it had been kept and under what circumstances death occurred, and so forth, what it is that enables you to express that opinion.

A. In this particular instance I refer to, the woman was shot about eight o'clock and the examination was made about noon of the same day, Sunday morning, February 5.

Q. What did you do in making that examination?

A. The body was examined in the usual way. The brain was examined, the heart, the lungs and the alimentary canal, and the thyroid gland.

Q. Now, when was the brain removed — how long after you began the post-mortem?

A. The brain was removed the first thing.

Q. What was done with it then?

A. It was looked at and examined.

Q. What did you do with it next?

A. I cut out some pieces for microscopical examination.

Q. What did you do with those?

A. Examined them microscopically.

Q. You did not do that while you were examining the other organs?

A. No, sir. It went through the usual technical procedures which have to do with the preparation of thin sections for microscopical examination.

Q. What I want to know is this: When you took the brain out you examined certain other organs and I want to know what was done with that brain while you were making the examination of the other organs.

A. I do not remember whether it was laid to one side or put back in the body, or what was done with it.

Q. When was it that you completed your examination of the other organs?

A. Perhaps an hour or an hour and a half after the examination was begun.

Q. Where was this post mortem held?

A. The particular post mortem examination was held on Wabash avenue near 16th street.

Q. After you were prepared to deal with this brain from the standpoint of a microscopic examination, where did you take the brain to?

A. The brain was left in the body.

Q. You just took it out and then put it back into the body?

A. Yes, sir; the brain was left and buried with the body, so far as I know.

Q. Then this brain, or a portion of it, was cut away at the same time for microscopical examination, where did you take that?

A. I took that to my laboratory.

Q. How long after you began this post mortem was it until you examined that brain microscopically?

A. Oh, I don't remember. I was at that time examining a considerable number of similar things, brains and other organs, it might have been a week or it might have been two weeks.

Q. Now, what was the test to which you subjected that brain, I would like to have you give it in detail.

A. The sections were made by what is known as the cellodine method of the brain as well as all other organs, and for this purpose the pieces of the brain were fixed — fixed — that means that the tissue has to be cooked, something like you cook an egg, only the cooking is done with a fluid that coagulates the tissue and makes it hard. Of the fluids that were used for this purpose, there were strong alcohol, 96 or 98 per cent., perhaps absolute alcohol, and what is know as Zenker's Fluid. Zenker's Fluid contains sublimate of mercury and bichlormate of potassium, and a little sedium bisulphate and glacial acetic acid, a strong acetic acid. These fluids, the alcohol and Zenker's Fluid, are commonly used in all laboratories all over the world for these purposes. These tissues, fixed in this way, were infiltrated with a substance making them hard.

Q. What was that substance?

A. In one instance — are you speaking ——

Q. I am speaking of this brain.

A. You say of the one examination of the brain?

Q. Yes, of this particular brain.

A. The brain was examined for Nissl's Bodies by the technique laid down by Nissl, and other methods.

Q. I am trying to ascertain what you did in that con-

nection.

A. The brain was fixed in strong alcohol, and then cut without imbedding and strained with alkaline methlene blue stain for Nissl's Bodies, as I have already stated, and then it was examined.

Q. Under the microscope?

A. Yes, sir.

Q. That was after all that had been done?

A. Yes, sir; all of that always would have to be done in order to develop the particular information that is desired when one looks for Nissl's Bodies.

Q. In this instance, that was all done?

A. Yes, sir.

Q. And that concluded your exaimnation of that brain?

A. No, I examined it in other ways.

Q. Well, give us just what you did.

A. The other ways were the usual technique which have to do with what is known as hematoxylin and with cosin staining method. This is also a standard method used in all laboratories.

Q. Now, speaking of the Zenetz case; which of the particular Zenetz cases are you referring to when you talk about one of them?

A. The first case — in the other two cases, there were symptoms of other diseases.

Q. Yes?

A. And I supposed it was the first case I was questioned about.

A. At least, you were talking only about the first case?

A. Yes, I think that is true.

The Court: Was that the Italian woman?

The Witness: The article was in German — I don't think she was an Italian, the case was reported from Russia or Poland.

The Court: I meant the case you talked about examining the brain of.

The Witness: No, sir; a Polish woman, Stefinia Porembor.

BY MR. MILLER:

Q. Now, as to the first of the Zenetz cases, if I understood your direct examination on, it proceeds on the theory that it might not have been due to caffeine poisoning from the fact that the heart was contracted. Did you ever see a heart of a person killed from caffeine poisoning, and do you know how the heart would be?

A. No, sir.

Q. Then you are not prepared to compare it with the

heart of a person killed by caffeine?

A. No, sir.

Q. Well, you are acquainted with Matorica Medica and therapeutics by Schumaker?

A. I know there is such a book. I am not acquainted with it.

Q. Well now then, Doctor, reading from page 286 of Doctor Schumaker's work:

"Death may result from tetanic contractions of the heart."

Now, would that be a heart contracted just as Doctor Zenetz reported, is that the case you were talking about?

A. Yes, sir; but you could cut it with a sharp knife.

Q. Didn't Doctor Zenetz state you could not cut the heart with a sharp knife?

A. He said, with difficulty.

Q. That meant with difficulty as compared with the normal heart?

A. No, I don't know that it did.

Q. You know that it did not?

A. I have my opinions about the interpretation to be made in connection with that case.

Q. Doctor Zenetz didn't say in this case you could not cut the heart but he said it was cut with difficulty?

A. Yes, sir.

Q. I ask you again if that did not mean as contrasted with the ordinary or normal heart, taken in connection with the effects or result in that case, or are you prepared to express an opinion on that point, that is authentic?

A. Yes, sir; I would like to express my opinion about that.

Q. Well. what is your opinion that you wish to express about it?

A. My opinion is that this heart is what is known as post mortem rigidity, and when the heart is contracted by post mortem rigor, it is hard and firm, and it does not — it cuts with more resistance, but it cuts perfectly readily. It is like the difference between cutting a hard cheese and a soft cheese.

Q. And the normal heart is like a soft cheese, you say?

A. Yes, sir; if you wait long enough after death.

Q. And this one you understand to have been very rigid?

A. Yes, sir.

Q. More so than the ordinary heart?

A. Like post mortem rigidity.

Q. Now, you do know it to be a fact, don't you, Doctor, from your long experience, that all things else being

equal, qualifications and intelligence being equal, that the attendant physician and surgeon who holds the post mortem is better prepared to express an opinion from the examination of the organs as to the cause of death than a third person would be from reading the report?

A. Well, that might be so in some instances.

Q. And particularly if a man had never seen a caffeine heart?

A. Is that the question?

Q. Yes; I say particularly would that be true as to a person who had never seen a caffeine heart as compared with a man like Doctor Zenetz who has been studying the effects of caffeine for five or six years, as his report shows?

A. I don't think there is any such thing as a caffeine heart.

Q. Well, I know you don't think so, that is very apparent, but I am asking if a man has made a study of that particular science as to the effects of caffeine on the human system for five or six years, as Doctor Zenetz article shows he had, and another person of equal intelligence that has never seen a caffeine heart had been called on to read the report of the man who held the post mortem, would not the man with the long experience who had made the examination and held the post mortem be prepared, in your opinion, to express a better opinion ——

The Court: That is obvious. That does not require any answer, Doctor.

Mr. Miller: Well, it does not seem to be obvious to the witness.

The Court: He need not answer it, it is obvious.

BY MR. MILLER:

Q. You read the French language, Doctor?

A. Yes, I read the French language and the German, both not as readily as I wish I did.

Q. You are prepared to read Doctor Lemaire's article respecting caffeine poisoning, I have no doubt, and I would like to pass you an article by Lemaire. You know Lemaire is a French writer?

A. Yes, sir; I have looked through that article hurriedly.

Q. Then, you are somewhat familiar with it?

A. Yes, sir; a little.

Q. Well, will you kindly pass it to him — (addressing associate counsel.) I will ask you if Doctor Lemaire does not report as many as 30 or 31 cases due to caffeine poisoning in this article which is referred to, which you have now before you.

Mr. Sizer: I did not examine Le Count, if your Honor pleases, as a practicing physician or a physiological chemist, or a toxicologist, or anything of that kind. We simply asked him as to the Zenetz case, and as to what that indicated from a pathological standpoint.

Mr. Miller: Yes, that is true, but I am asking him to express an opinion from his pathological standpoint as to those 31 cases reported by Doctor Lemaire.

The Court: Well, that is matter in chief, so far as you are concerned; he was not examined upon that on direct examination, it is new matter, and as I have heretofore ruled, you cannot go into new matter.

Mr. Miller: I would have a right to ask him, ——

The Court: (Interrupting.) You would not get the contents of the book in evidence that way.

Mr. Miller: I did not ask for that.

The Court: But that is the effect of it.

Mr. Miller: With respect to the one of the Zenetz cases, he stated in his opinion there was no such thing as a caffeine heart. Now then, I submit I have a right to appeal to the literature which he says himself he has read, for the purpose of contradicting that statement.

The Court: Does that show a caffeine heart?

Mr. Miller: I think so.

The Court: If there is any statement in there that there is such a thing as a caffeine heart, it will be competent.

Mr. Miller: It states the effect of caffeine on the heart.

The Court: Well, that is a very different matter — I say he was asked about a caffeine heart, and if you find a statement to that effect ——

Mr. Miller: I will ask him whether or not — I am trying to follow his own language — whether or not in these cases reported, that all of them, or none of them, as shown in the Zenetz case, show that the heart was spastically contracted, and that Doctor Lemaire attributed that to the effect of the caffeine.

The Witness: Would you be willing to help me by showing which one post mortem examinations were done on?

The Court: I don't think that is competent on cross-examination — if the witness was not asked about that on direct examination.

Mr. Miller: I am not prepared to state as to that, but I presume that in all cases officially reported like that, there would be post mortem examinations, and presume that presumption attaches in the Zenetz case.

The Witness: I will see. (Examining book.)

Mr. Miller: I am perfectly willing for him to come

away from the stand and let someone else take the stand and look it up afterwards. My point is that he has doubted the authenticity of the Zenetz case because it showed a contracted heart.

Mr. Sizer: Not the authenticity, Mr. Miller.

The Court: If you have any reported cases showing a contracted heart, reported cases, due to caffeine, you may ask him about them.

Mr. Miller: I have the English translation here. It will take some time to read that article, and I suggest that he might do that and then go back.

The Court: Well, the witness may leave the stand and look it over and then you may recall him for further cross-examination.

Mr. Miller: We can doubtless recall him after the next witness takes the stand.

Mr. Hirsch: We wish to finish our re-direct.

The Court: Is there any further cross-examination, Mr. Miller, before they do that?

Mr. Miller: No.

RE-DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Is there any evidence that Doctor Zenetz made the post mortem examination?

Mr. Miller: I object to that.

The Court: The objection is sustained. I think we all know about these cases, the jury has heard so much about it that it can draw its own conclusions about it.

BY MR. HIRSCH:

Q. Did you make a miscroscopical examination of the organs of the body you referred to?

A. Yes, sir; of the important organs.

Q. Did you state that you delivered the portions that had been prepared for miscroscopic examination, to any one, and if so, to whom?

A. I submitted the miscroscopic preparations of these five to Doctor Hektoen, or Professor Hektoen.

Mr. Sizer: While we are on that subject of the Zenetz cases, may it please your Honor, Mr. Miller was to have translations of the report of the cases, and to offer them in evidence — have you done that, Mr. Miller?

Mr. Miller: Yes, I did that, and I gave it to the stenographer. I think he copied it literally into the transcript.

Mr. Sizer: I want to call the attention of the Court, that the article of Zenetz consisted in part of a report of this case and in part of his own discussion of the subject

of caffeine. I understand your Honor only admitted the report of the cases in evidence, and not the opinion or anything else, and we simply want the report of the case and not any of Doctor Zenetz's opinions, and we wish to ask to have that part stricken out.

Mr. Miller: Well, they called for authorities on the proposition that caffeine would produce death.

Mr. Sizer: For reported cases.

Mr. Miller: You called for authorities on that point.

The Court: My recollection is that he called for reported cases of caffeine causing death.

Mr. Miller: Of course, the stenographer's notes are the best evidence, and undoubtedly your Honor's recollection would be refreshed. There is more than one of those cases, and I don't know how the stenographer has reported them, whether literally, as Doctor Zenetz chronicled them, and then his own discussion or not, but whatever the number of cases are, I submit we are entitled to have them go in.

Mr. Sizer: There is no doubt about that part of it.

The Court: Yes, what ever he says about these cases in the report of the cases is to go in. His general opinion, as disassociated from those cases, is not proper to go in, and was not called for, as I recall it. This rule is subject, however, to correction if my ruling is in error.

Mr. Miller: As to that witnesses, or any other witness, who was asked to produce authority on that point ——

The Court: (Interrupting.) Sometimes the witness has been asked for authorities on a point, or on a case, and then again, asked for reported cases, and I have endeavored to preserve that distinction. My recollection is, this is limited to reported cases.

Mr. Sizer: I think your Honor's recollection is right, and the reason I called attention to it is because I noticed in that translated copy they submitted to us, there is not only the report of one or two cases but also a general disertation on the subject of the use of caffeine.

The Court: Well, that portion will be stricken out unless it is called to my attention by the stenographer's record that you called for more than the record of the cases, and in which event I will modify my ruling to correspond with the facts.

BY MR. MILLER:

Q. Now, just one more question. Does not Doctor Zenetz show in connection with the cases that he did experimental work on humans for the purpose of ascertaining the effect of caffeine thereon?

A. I don't think so.

Q. You do not recall any statement like that?

A. No, sir; the whole tenor of the article is that he could not be ranked with such men.

Q. That is your conclusion?

A. Do you want my reasons?

Q. No, I ask you if that is your conclusion.

A. Yes, that is my conclusion.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. I think we should have those conclusions.

The Court: I do not think that question and answer are relevant under the ruling. The question of Doctor Zenetz's cases was not called in by the question which called for recorded cases.

Mr. Sizer: Inasmuch as counsel, cross-examining, has asked witness about the Zenetz case, I think he is entitled to give that.

Mr. Miller: I didn't ask him for Zenetz's qualifications.

The Court: He asked what the article showed and that was objectionable, and I want to strike it out.

Mr. Sizer: I do not ——

The Court: It seems to me that both sides, in the multiplicy of detail they are going into, are bewildering the jury, and I am from time to time of my own motion excluding matters. It is difficult for the jury to follow all of the ramifications of this testimony and we may lose sight of important things because of this unnecessary detail. I therefore exclude this.

DR. JOHN MARSHALL,
recalled as a witness herein, testified as follows:

CROSS-EXAMINATION, (Continued.)
BY MR. MILLER:

Q. Yesterday in stating the distinction between the foreign and American and English authors in dealing with toxicology in showing why the foreign authorities dealt more extensively with poisons than the English authorities you instanced the fact that certain foreign authorities treated tartaric acid as a poison and I assume from that that the English authorities do not.

A. The English authorities do not.

Q. I quote to you Brundage on Toxicology — I hand it to you, and I will ask you to state whether or not on page eighty you find a recorded fatal case or a recorded case of poisoning by tartaric acid.

A. I see no report of a case of death by tartaric acid administration.

Q. But it is referred to as a toxic substance in that treatise on toxicology?

A. The fatal dose is given as one ounce.

Q. That means, of course, it is toxic?

A. Yes, sir.

Q. That is an English publication?

A. Yes, sir; published in this country, but I should like to say that I do not consider that this book is recognized as a standard authority or toxicology.

Q. Now, Doctor Witthaus was on the stand yesterday. Please examine the volume of his book that he himself wrote on toxicology and on pages 641 and 642 state if he does not deal with tartaric acid.

A. You remember that I stated yesterday I had not consulted Doctor Witthaus' book because it had disappeared from my library but I find tartaric acid is mentioned here.

Q. Kindly refer to Taylor, page 653, which I will pass to you, and state if that does not also deal with tartaric acid as a toxic substance or poison.

A. Yes, sir; it does.

Q. Now, please refer to Dwight on Poisons, Their Effects and Detection, page 732, and state if tartaric acid is not found thereon and the treatment for it as a toxic substance given.

A. Tartaric acid is mentioned here but I do not see on this page any prescription.

Q. That refers you to where you can find the treatment.

A. The same treatment as oxalic acid.

Q. Those publications that have been submitted to you are all published in the English language and are English publications?

A. Yes, sir.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Tartaric acid is the acid found in the grape?

A. Yes, sir.

Q. You say the toxic dose, or the lethal dose, is given as one ounce?

A. Yes, sir.

Q. Which?

A. The fatal dose.

Q. One ounce is how many grains?

A. About 460 grains.

Q. Would it not be 480 grains?

A. Yes, sir.

Q. Those same foreign authors or foreign works that you referred to on yesterday treat garlic as among the toxine?

A. Yes, sir.

Mr. Miller: I did not go into that, I only cross-examined him as to what he said yesterday, when I did not have the books on hand. Of course, if this is to be made relevant I shall have to ask, after I get the books, the right to recall him.

The Court: We will get to the question of recalling when we reach it, but I sustain the motion. I think we have gone for enough on that.

BY MR. SIZER:

Q. Doctor Witthaus is in now. Do you want to further cross-examine him before we go on to some one else?

Mr. Miller: No, sir.

DR. LUDWIG HEKTOEN,

the next witness called on behalf of the Claimant and Intervenor, first duly sworn, of lawful age, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Where do you reside?

A. Chicago.

Q. What is your present occupation?

A. I am professor of pathology.

Q. At what institution?

A. Chicago Rush Medical College.

Q. How long have you held that position?

A. About sixteen years.

Q. Where did you receive your technical education?

A. I received my technical education partly in Chicago and partly in Europe.

Q. At what institution in Europe?

A. I studied at the University of Upealla, the University of Berlin, the University of Prague, the University of Liverpool, and elsewhere.

Q. You have confined your medical work to that of pathology?

A. Yes, sir.

Q. What is pathology?

A. Pathology is a scence which treats of disease, especially the causes of disease and the effects of disease upon the structure of the body.

Q. Have you written any work on pathology and if so, what?

A. I have taken part in the writing of the American Textbook of Pathology.

Q. Do you hold any position by virture of which you make post-mortem examinations in so far as deaths due to accidents and violence are concerned?

A. Yes, sir; yes, I do.

Q. How many post-mortem examinations have you made?

A. Several thousand post-mortem examinations.

Q. What is the object of a post-mortem examination?

The Court: I think we all know that.

BY MR. HIRSCH:

Q. Are you familiar with the appearance and structure of animals ordinarily used in the laboratories, both in health and disease?

A. I am.

Q. Were you asked to go to Ann Arbor, Michigan, at any time, and if so, what was the date, to examine some guinea pigs that Doctor Vaughan had?

A. I went to Ann Arbor and spent May 17, 1910, there and examined fifteen guinea pigs in Doctor Vaughan's laboratory.

Q. Just state what you did at that time in the way of examination of guinea pigs.

A. I examined all the important organs in every one of those guinea pigs and procured specimens for microscopical examination.

Q. What was the result of your examination?

A. The results of the examination were that in all the animals all the organs were found to be perfectly normal, both on gross and on microscopical examination, except that in the spleen of Guinea Pigs numbered 13 and 14 there was a slight excess of pigment.

Q. Was that due to caffeine?

A. In my opinion it was not.

Q. You say you examined them microscopically; if so, when and where, and what did you do for the purpose of keeping these guinea pigs intact?

A. I placed the pieces in standard pickling solution at the time I made the post-mortem examination, and then I took the bottles containing the solution and the organs back to Chicago and completed the microscopical examination in the course of the next few months.

Q. Did you see these animals killed?

A. Yes, sir.

Q. Did you examine them immediately after they were killed?

A. Yes, sir.

Q. What organs did you examine microscopically?

A. I examined the brain, the lungs, the heart, the sorts, the liver, the spleen, the pancreas, the stomach, the intestines, the kidneys and the super-renal bodies, and in some cases the bone marrow.

Q. Did you find anything except as you have stated that was away from the normal?

A. No, sir.

Q. Did you examine the animals you found in Doctor Wessener's laboratory, and if so, state what and where they were and how long after death, and if you examined them macroscopically and microscopically?

A. I examined, in all, four rabbits at Doctor Wessener's laboratory in Chicago. Three of them were examined last October. Those were Rabbits Nos. 3, 4 and 5. The fourth rabbit was examined last February and was numbered No. 6. These four rabbits were all killed in my presence by a blow on the back of the neck and they were examined immediately afterwards. The organs all appeared to be practically normal to the naked eye and they were also found to be perfectly normal upon the microscopical examination except that there were slight changes in the liver of Rabbit No. 3 and in the liver of Rabbit No. 6.

Q. Do you know which were the controls and which were the tests, of your own knowledge?

A. No, sir; I do not know of my own knowledge.

Mr. Hirsch: We will ask to be allowed to submit a list as to which were the test and which the control animals, and we can recall Doctor Wessener.

The Court: That is already in, I think.

BY MR. HIRSCH:

Q. Have you made any examination on human bodies to ascertain if there is any change due to taking of coffee?

A. I have.

Q. State what and under what conditions you did it.

A. I took part in the post-mortem examination of almost all the bodies referred to by Doctor Le Count. There were two of those bodies that I did not see, but I have made microscopic examination of the organs of all the bodies except one.

Q. Did you find any changes there that were attributable to the drinking of tea or coffee?

A. I did not.

Q. The animals that you referred to, did you examine them particularly or did you make any special study to determine whether there were any indications of arterioscler-

osis? If so, what?

A. I looked especially for changes in the arteries and found none.

Q. From your examination of rabbits, guinea pigs and humans, would you say that caffeine causes any change, either in the lower animals or human beings?

Mr. Miller: I wish to know if this witness, from a medical standpoint or as a physiologist, is prepared to state the effect of caffeine on a human being.

Mr. Hirsch: I will put it — Will it produce any structural change?

Mr. Miller: If he is qualified to express an opinion, all right.

The Witness: I think I am.

BY MR. HIRSCH:

Q. Now, I want to know from your examination of the bodies of animals, human beings, rabbits and guinea pigs, whether there could be any structural changes from the taking of caffeine-containing beverages.

A. In my opinion none.

Mr. Hirsch: Do I understand, your Honor, that we cannot refer to the Zenetz case?

The Court: If you have any new point you can, but to go over the same matters already brought out so often, I do not think it necessary.

Mr. Hirsch: That depends, but I will ask if the Doctor has examined the Zenetz case.

The Court: And if there is anything that he wants to say.

BY MR. HIRSCH:

Q. Is there anything in addition to what has been brought out that you can say about the Zenetz case?

A. I do not think so. I think I would have to go over the same ground. I do not believe it was a case of caffeine poisoning.

Mr. Miller: I object to that answer, and what he believes it to be.

The Court: I exclude it unless he gives his reason. I will allow him to say whether the report shows that anything indicates it was or was not a death from caffeine poisoning.

BY MR. HIRSCH:

Q. Give your reasons.

A. The reasons are that it was not conclusively shown that the woman took any caffeine.

The Court: I think that has been fully covered before.

BY MR. HIRSCH:

Q. Anything else?

A. In the next place, there is nothing in the report to indicate the length of time that elapsed before the supposed dose of caffeine was taken and the time of the death. It says in the report while she was talking with her friend in the house she gave a scream and fell down dead. In the next place, the post-mortem examination is utterly inadequate to establish anything as to the cause of death as given in that report.

Q. From the examination of the guinea pigs, rabbits, human beings — did you notice any chromotolysi?

A. I did not.

The Court: Where were those cases of pigment that you noticed on some of the animals?

The Witness: In the spleen.

BY MR. HIRSCH:

Q. What was that slight excess of pigment due to?

A. It was derived from the red blood corpuscles. If they break down, the pigment is deposited in the spleen.

Q. That is a normal condition?

A. That occurs normally.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. In one of those Zenetz cases about which you have been speaking the report is that the woman did not feel quite well and that at night began taking a powder every two hours. You recall that?

A. Yes, sir.

Q. And up to morning; that you understand to be the morning of the following day?

A. Yes, sir.

Q. "She had taken five powders?"

A. Yes, sir.

Q. And at eleven o'clock in the morning she fell unconscious?

A. Yes, sir.

Q. You say there is nothing in that report to show how long after she took this until she fell unconscious?

A. I did not say that.

Q. You do not mean to be understood as making that statement?

A. I didn't say it and therefore I didn't mean to be understood that way.

Q. The report says that at the autopsy made the next day they found the heart contracted like a fist. Do you

mean to say from that report there is nothing from which you can judge as to when the autopsy was held?

A. No, sir; I didn't say that.

Q. That is what I understood you to say.

A. But I didn't say it.

Q. You state, I believe, that you are acquainted with the physiological action of caffeine on the human system?

A. I did not state that.

Q. What was that that you said — how could you state that in your opinion there were no effects due to caffeine on those guinea pigs or rabbits if you do not know what the physiological action of the drug would be when taken?

A. I stated there were no structural changes due to caffeine.

Q. How do you know?

A. I know there were no structural changes in the bodies I examined.

Q. All you know is you didn't find anything out of the normal?

A. That is it.

Q. Except you found an excess of something in two specimens?

A. Yes, sir.

Q. That is all you observed, and from that you conclude that caffeine did not have any action?

A. Yes, sir.

Q. That is on the presumption that the caffeine had been administered?

A. It had no effect on the structural condition of the organs.

Q. What do you mean by "structural" as compared with other portions of the organs?

A. I mean the anatomical appearance of the organs, there was nothing to indicate that those organs were diseased.

Q. Now, are you familiar with the authorities that deal with anatomical changes resulting from caffeine — have you read the authorities on that subject?

A. I do not know of any authorities that treat of anatomical changes due to caffeine.

Q. Take Doctor Kobert, on page sixteen where he makes this statement ——

The Court: This witness has not expressed his opinion based on reading, but from his observation of those particular cases.

BY MR. MILLER:

Q. Is the opinion which you have expressed here based entirely on the observation you made of these particular

specimens or is it based on your examination of the literature and study of the effects of caffeine on the anatomical structures and changes?

A. My opinion is based upon what I have seen myself.

Q. In these particular specimens?

A. In these cases and in these animals.

Q. Not on anything you have read?

A. I have not been able to find anything.

Q. So that you have not read anything respecting the effects of caffeine on the system?

A. On the structural changes of the system.

Q. Have you searched to see whether or not there was anything written on that subject?

A. I have searched in the usual sources a pathologist would search in.

Q. Can you name the books you have examined?

A. I can some of them.

Q. Did you examine Kobert?

A. No, sir.

Mr. Hirsch: I would like for Mr. Miller to state the edition of Kobert.

The Court: That is not admitted.

Mr. Miller: I have no objection — it is 1906.

Mr. Hirsch: That is not a pathological work.

The Court: I have not admitted that.

Mr. Sizer: But counsel has discussed it.

The Court: But I have excluded it all. If counsel want to ask privately for the information they can do so.

BY MR. MILLER:

Q. Do you know whether or not the administration of caffeine, from your personal knowledge, would cause any change in the structure? Or have you experimented to ascertain?

A. No, sir; in so far as I have taken part in those experiments that have been outlined by Doctor Vaughan and Doctor Wessener, and so far as I have examined the bodies of human beings who have been drinkers of tea and coffee.

Q. That is, of course, based on hearsay?

A. Yes, sir.

Q. Did you examine to ascertain in those specimens that you examined whether or not there were any vascular changes?

A. Yes, sir; I did and there were none.

Mr. Sizer: I want to recall Doctor Witthaus to ask him one question.

(Witness excused.)

DR. RUDOLPH WITTHAUS, recalled as a witness herein, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. You were asked yesterday on cross-examination about thirteen cases of alleged caffeine poisoning which were referred to in your work and which you stated you copied from Kobert without knowing anything about the cases. I want to know if since your cross-examination you have consulted a subsequent edition of Kobert to the one from which you copied these and whether or not in this subsequent edition of Kobert any reference is made to those thirteen cases.

A. It is omitted entirely in the second edition.

Q. And the edition from which you copied the reference was the first edition?

A. Yes, sir. I may say that the second edition was not out when my book was written.

RE-CROSS-EXAMINATION,
BY MR. MILLER:

Q. State if it is not true that in the edition of Kobert which you consulted and about which you have testified on redirect examination this morning, on page 16 of the table of contents in dealing with poisons which without causing serious anatomical changes may cause death, the author includes along with morphine, cocaine and aconite, and strychnine, the substance caffeine.

Mr. Sizer: What book is that?

Mr. Miller: Your edition of Kobert.

Mr. Sizer: The last edition?

Mr. Miller: Yes.

BY MR. MILLER:

Q. Look on page sixteen and you will find it marked there, and caffeine is No. 17 of the group there.

A. On page sixteen?

Q. Yes. Page sixteen of the Table of Contents.

A. It is on page eighteen.

Q. I say, on page sixteen under the group of poisons which without causing serious anatomical changes may cause death including those substances which I previously read along with it and immediately following under Group 17 you do not find caffeine recorded.

A. Yes, sir; caffeine is recorded but not along with morphine.

Q. Morphine is recorded in the same group and is one of the same class, and under that same title?

A. Yes, sir; under the same general head.

Q. Now turn to Part No. 3 of that book, on page 892, under the title of poisons which without causing serious anatomical changes may cause death, and look at Division One under the third part and under the heading "Poisons of the Cerebro-Spinal Nervous System," and state if such poisons are not divided into groups, caffeine being Group 17 and found on page 1079.

A. That is the same as in the table of contents.

Q. It is treated in the text the same way?

A. Yes, sir; but it does not give any case of death.

Q. I am talking about cases of poisoning; you are a toxicologist. Now turn to Doctor Kionka's work on toxicology entitled: "Fundamentals of Toxicology" and under the grouping of poisons of various kinds, including nerve poisons, on pages 5 and 6, and included along in the same group — chloroform, cocaine, opium and morphine— and state if you do not find caffeine.

A. Yes, sir.

Q. Now turn to Doctor Blucher's "Poisons and Poisoning" and on page 94, after dealing with cocaine, just before treating of Belladonna, state if the doctor does not make the following observation:

"Coffee contains caffeine and tea contains theine. Both are identically the same in their action to cocaine only that the poisonousness of caffeine is far behind that of cocaine."

A. It is so stated here.

Q. Now, on page 95: (Reading.)

"Very strong infusions of coffee have caused acute caffeine poisoning, — yes, even death."

A. So he says.

Q. Will you give us a literal translation of what is stated?

A. That is practically it.

Q. I thought you said it was not. (Reading.)

"The symptoms or conditions of excitement resembling intoxication, dizziness, ringing in the ears, headache, trembling, restlessness, sleeplessness, confusion of ideas, palpitation of the heart at times and also convulsions. Death may occur from paralysis of the heart. For this reason people suffering from heart disease should be unconditionally forbidden the use of coffee, especially of strong coffee, the serious consequences being made clear to them."

Q. Do you find that laid down as part of the text?

A. Yes, sir.

Q. After that follows the treatment for acute poisoning of that class?

A. Yes, sir; after that follows chronic poisoning.

Q. And then follows the treatment for that?

A. Yes, sir.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Do any of these works you were asked about cite or refer to any case of death from caffeine?

A. No, sir; except that last case recognizes the possibility. I never heard of that man before, however.

Q. Does it refer to any specific case of caffeine poisoning?

A. No, sir.

Q. These are all foreign works?

A. Except Brundage.

Q. Do these same works discuss under the head of toxic substances, acetic acid and glycerine and ginger, sage and peppermint and table salt, and articles of that kind?

A. Yes, sir.

BY MR. MILLER:

Q. But not in the same group, not as a nerve and muscle poison?

A. I do not recall where they are.

Mr. Miller: Then you are not prepared to say, so you can stand aside.

(Witness excused.)

DR. REYNOLD WEBB WILCOX,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Will you state your full name?

A. Doctor Reynold Webb Wilcox.

Q. Are you a practicing physician?

A. Yes, sir.

Q. Located where?

A. New York City.

Q. How long have you practiced?

A. For thirty years.

Q. Will you state your medical education and qualification?

A. I was graduated as a Bachelor of Arts at Yale in 1878. I received my degree of Master of Arts from Obert College in New York in 1881 and Doctor of Medicine from Harvard University in the same year, and I received the Honorary Degree from Maryville College, Maryville, Tenn. I served for short periods in the hospitals in Boston and I

studied fifteen months actual study in Vienna, Heidelburg, Paris and Edinburgh.

Q. Has your practice been extensive or otherwise?

A. Presumably extensive.

Q. Have you had any experience with your patients and persons with whom you have associated with respect to the use of caffeine as contained in beverages?

A. I have directed patients to make use of coffee at various times ——

Mr. Miller: I object to that because it is not responsive to the counsel's question.

Mr. Sizer: I think it is.

The Court: I think that objection is one to be raised solely by counsel asking the question.

Mr. Miller: When counsel asks what his experience is, his answer should be wholly confined to that. Counsel has not asked as to whether it was a therapeutic agent or not, and unless he states he directed it as a therapeutic agent he should not be allowed to state he directed its use.

Mr. Sizer: He says he has been a physician for thirty years.

The Court: I think he is qualified to express an opinion as to therapeutic effect. The objection that it is not responsive is one to be made by the counsel asking the question.

(The question was read to the witness.)

A. Yes, sir.

BY MR. SIZER:

Q. Is caffeine as contained in beverages when used in moderate quantities by an individual under normal and ordinary conditions — is it injurious to health?

Mr. Miller: I object to that as putting limitations on the question that are not warranted under the proof. In the first place, what is a moderate quantity for one purpose is shown to be distinctly an immoderate quantity for another, and that is an unfair limitation.

Mr. Sizer: I propose to follow that up by showing what is a moderate quantity.

The Court: He can show what he means by moderate quantity in his answer.

BY MR. SIZER:

Q. In that same connection you may state what you consider a moderate quantity of caffeine to be taken in the form of beverage by an ordinary person.

The Court: I mean that the witness can state what amount he meant by "moderate."

BY MR. SIZER:

Q. Then you may state in your answer what you mean

by the moderate use of caffeine in connection with your answer.

A. I think the average healthy adult will take with benefit to himself as a minimum, four to six grains a day. I have myself taken as near as I can ascertain about six grains of caffeine a day for the last thirty years.

Q. Suppose a person should take an excessive amount of caffeine, would the results that would follow from that be of a permanent or serious character or of a temporary character?

Mr. Miller: I object to that. He may state what the effect will be.

The Court: That exception is well taken except that as heretofore ruled, the witness may state what would be the effect on the general health and then state what is his opinion the effect would be on the general health.

Mr. Sizer: I withdraw that and state it this way:

BY MR. SIZER:

Q. In the event a person takes an excessively large quantity of caffeine, what would be the result following and would those results be permanent or temporary in their character?

A. A large dose of caffeine would be likely to cause some irregularity of the heart, some flushing of the face, increased flow of urine, perhaps some nervousness lasting probably during the time the caffeine was in the body — probably the end of the symptoms would be gone within twelve hours, or quite likely even six.

Q. Does an increased flow of urine necessarily indicate impairment of the health?

A. Not at all.

Q. Have you made any test on yourself to ascertain the effect of taking excessive quantities of caffeine?

A. I have.

Q. What was the quantity you took and over what period of time did you take it?

A. I took forty-two grains of caffeine, the alkaloids, within an hour.

Q. What effect did it produce on you?

A. It flushed up my face considerably.

Q. Was that the only effect that you observed?

A. The dose was taken about three o'clock in the afternoon, between three and four o'clock; I didn't go to sleep until three o'clock the next morning, and it had a diuretic effect.

Q. How long did that effect last?

A. The diuretic effect?

Q. Well, either of the effects, all of effects you have mentioned?

A. They were apparently all over because I slept from three to eight and was awakened at eight.

Q. Now doctor, would that be a very large amount of caffeine for any person to take in the form of a beverage?

A. Figured out as in Coca-Cola, the way that Coca-Cola I understand is taken, one part of coca cola to seven of carbonated water, it would represent about two gallons of liquid or over two gallons of liquid.

Q. Could an ordinary person take that amount of liquid in the course of a day?

A. I think he would have hard work to hold it.

Q. Is caffeine as taken in the form of beverages a habit forming substance?

A. Not in the sense that it is used, requiring more to satisfy the real or fanciful longing for the substance.

Q. Did you have occasion sometimes in your practice to prohibit the use of caffeine-containing beverages on account of the condition of the patient?

A. Yes, sir.

Q. Do you have any difficulty in inducing them to discontinue the use of it if the effect of its use is found to be injurious?

A. No, sir; I have not found—thus far found it to be so.

Q. Is there any depression that follows the use of caffeine in the form of beverages in moderate quantity?

A. If you are exalted, you will come back again to the level. I don't think you will go below the level. The depression is about equal to the exaltation, and the depression will not carry you below the level from which you started.

Q. What would be the effect of the amount of water and syrup contained in an ordinary glass of Coca-Cola in preventing the taking of too much caffeine?

A. It is a question of bulk.

Q. Would the question of the amount of sugar in it act as a preventative of taking excessive quantities?

A. Well, I think the bulk would be the chief obstacle. The sugar would undoubtedly have a very nauseating effect in one if he undertook to take so much of it.

Q. You say you have used caffeine in beverages?

A. Yes, sir.

Q. For a number of years?

A. Yes, sir.

Q. About what quantity have you used?

A. I should think about six grains. I probably used less in the early years, in my student days, because I had

to live very economically and I probably did not get as good coffee as I get now and I therefore get more caffeine now than I did when I started using it.

Q. Has the use you have made of caffeine resulted in any serious impairment to your health so far as you know?

A. Not so far as I know, none.

Mr. Sizer: You may cross-examine him.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Doctor, what did you weigh when you experimented on yourself with caffeine?

A. About two hundred and ten pounds.

Q. What was your age?

A. I am fifty-five years old to-morrow.

Q. I know, but what was your age when you made the experiment?

A. These experiments with the caffeine were made on last week, Tuesday.

Q. Then you stated also that as you understand what is put in Coca-Cola — I infer from that you are not acquainted with the drink yourself?

A. I never drank but one glass.

Q. Now, what was that occasion for forbidding the continuance of the use of caffeine in your patients?

A. I did not say caffeine ——

Q. Well, you said caffeine substances.

A. I am willing to stand by the stenographer's notes; I said beverages.

Q. Well, caffeine as contained in beverages?

A. Yes, sir.

Q. What was the occasion for discontinuing the use of a beverage containing caffeine?

A. You want what I mean ——

Q. Yes; what was the reason for its discontinuance?

A. In tea the reason for discontinuing the beverage is that the amount of tannic acid is considerable, and when tea is made as it is usually made by domestic servants, where it is cooked from morning until night and begun the next day, it contains quite a strong solution of tannic acid which disturbs digestion, and that would be an objection to that.

Q. Is that the only objection you had?

A. And besides the theophyllin and adenin which is contained in tea in small quantities is said to be poisonous.

Q. Are those the result of caffeine?

A. They belong to the xanthine series.

Q. Do they belong to the same group as caffeine?

A. They are related generically and chemically.

Q. Well now, proceed. Any other kind of beverage?

A. In coffee you have the volatile substance — volatile oils and alcohol, and you have caffeine or caffeal which is said to be developed in the process of roasting, which disturbs digestion after protracted use.

Q. And is that the only reason for prohibiting the use of coffee?

A. You get the same results with decaffeanized coffee if it is prolonged.

Q. I ask you whether or not it was because of these substances that you have enumerated or whether it was also in whole or in part due to caffeine.

A. You mean to persons in health?

Q. No, I mean to persons where you direct its discontinuance.

A. There are certain instances of heart disease where it might be advisable to discontinue both tea and coffee on the ground of the caffeine content. That must be conceded.

Q. That must be conceded?

A. Yes, sir, in certain cases.

Q. What is the percentage of tannic acid in tea?

A. I don't know the percentage. It is sufficiently disagreeable in home-made tea to eliminate its use.

Q. Well, now, you wrote a book?

A. Yes, sir.

Q. On therapeutics?

A. Yes, sir.

Q. Now turn to that book, on page 382—

Mr. Hirsch: I suggest that you give the eddition of these books so the witness will know.

Mr. Miller: All right; I will be pleased to do so. This is 1905.

BY MR. MILLER:

Q. In discussing the action of caffeine on the heart you stated that from recent careful experiments on dogs whereby the effect of caffeine appears to consist in, first, an acceleration of the rhythm. What do you mean by an acceleration of the rhythm? What do you mean by rhythm?

A. Rhythm means the interval between the successive beats.

Q. That is, it made the heart beat faster?

A. Yes, sir.

Q. And second,—"A shortening of the movement commencing in the auricle and spreading to the ventricle." Explain a little more clearly what you mean there by auricle and ventricle.

A. The auricle is the upper chamber of the heart and the ventricle is the lower, and the blood passes from the auricle to the ventricle.

Q. And it makes a movement shorter as compared with the ventricle when you take caffeine?

A. Yes, sir.

Q. Then following that is the statement: "In large does auriculo-ventricular arhythmia, terminating in fibrilliary contractions of the auricle and finally of the ventricle." That is your present view on the subject?

A. That is not the last edition of the book in my opinion. If you will kindly look on the title page, you have it there—

Q. I said it was 1905.

A. There have been several reprintings.

Q. At the time you wrote this book you believed this?

A. Well, will you excuse me, will you answer my question?

Q. I beg your pardon. I quoted before that it was 1905, this edition, the sixth edition.

A. There is another edition since that.

Q. I asked you whether or not this statement was believed by you to be true when it was written in this book.

A. It was believed to be true when it was written.

Q. Have you changed your view since you wrote this book on that subject?

A. Yes, sir.

Q. Have you made any change in that respect in your new edition?

A. I cannot tell without comparison.

Q. Well, have you got your new edition here, Doctor so we could compare it?

A. It is in the city, I presume. I presume the same statement is in the last edition.

Q. Now, if the same statement is in the last edition, then the getting of the last edition would not make any change—I want to know what caused you to change your views and opinion since the last edition of your book.

A. If I recollect correctly my last edition was published in the year of grace 1907. Four years has elapsed within which various things have happened.

Q. And in the meantime you have been employed by the Coca-Cola Company?

A. Not for four years.

Q. But I say, in the meantime and since the last edition of your book was written?

A. Yes, sir.

Q. Now then, under the effect on the vessels, I notice

this statement: (Reading:)

"Caffeine stimulates a vase-moter center and under its influence the blood vessels are therefore contracted, causing a marked rise in the arterial pressure?"

Have you changed your view on that subject?

A. I have not.

Q. And — (Reading)

"The muscle fiber in the walls of the vessel, in common with the muscles in general, is also acted upon by the drug.'

Is that true or not?

A. To the best of my belief it is true.

Q. Then dealing with the muscles, I find this statement: (Reading:)

"Small doses increase the excitability of the muscles, augmenting the quickness and force of their contraction."

Is that true?

A. That is undoubtedly the result of laboratory experiments.

Q. But is that true?

A. I have no personal knowledge of it. I believed it to be true at the time it was written.

Q. And I suppose under larger doses the height of the contraction of a muscle is less, the maximum load it is capable of lifting is smaller and the muscle is exhausted by tetanus more quickly than a normal muscle. The contraction then becomes smaller and smaller, and the muscle gradually passes into rigor." Is that statement true?

A. It would be true from a local application of caffeine to the muscle, continued over a considerable period of time.

Q. But you did not limit that to the direct application there in your book.

A. No.

Q. And the following: (Reading:)

"The contraction then becomes smaller and smaller and the muscle generally passes into rigor."

Is that your view on the subject?

A. That is a laboratory experiment.

Q. Do you believe that is true?

A. I believe it is possible.

Q. Now, I find this further statement:

"The effect of caffeine on the cord" and that means the spinal cord—answer out, Doctor, the stenographer cannot hear you.

A. Yes, sir.

Q. (Continuing reading.) "Are reflex Irritability, then tremors, and finally tetanus. They closely resemble those of strychnine but are very much smaller, and occur

only with relatively large doses."

Is that the view you hold?

A. Laboratory experiments.

Q. Now, one more statement here:

"Caffeine is excreted in the urine in small quantities, but a considerable proportion of it is probably decomposed with the formation of xanthine, which is further broken up into urea".

Do you hold to that view?

A. Yes, sir; except I think it would take very large doses of caffeine to have any carried into the urine. I think under normal conditions, it is practically all broken up.

Q. Well, if it is broken up, then that is the process which it undergoes in the body, it is broken up into this end product as somebody discribed it the other day, and is carried away in the urine in that way.

A. Yes, sir.

Q. Now, you wrote an article and contributed it to the Medical News sometime since entitled "Review of Therapeutics for the Last Twelve Months" in which and dealing with caffeine, I find this statement:

"Further, the primary changes induced by the digitalis series are not so much evidenced by increased irritability of the parts effected, as by increased contractibility and increased dilation (increased tone) while there is no evidence of such change in the late stages of caffeine poisoning in which the ventricle is directly effected."

What do you mean by caffeine poisoning in that connection?

A. Will you pass me up the book?

Q. Yes, with pleasure.

A. (Examining the book.)

The Court: We will take a recess for five minutes.

The Witness: I am ready to answer this question.

The Court: All right, proceed.

The Witness: The quotation which you have presented me with, Mr. Miller, is from a presidential address which I delivered before the American Therapeutic society of New York May 13, 1902.

BY MR. MILLER:

Q. Yes.

A. You will observe in this address that this contribution to therapeutics which I believed were of importance, were mentioned. You will also observe in the very paragraph or section which you read is: "This is a report and abstract of the report of Cushmy and Van Oss" and you will observe also that in that statement, I have not given

my personad assent or dissent to it. It was a quotation from a report for the information of the Society, for their consideration. It is not a personal opinion in any sense of the word.

Q. I didn't ask as to that—I was asking you as to the language "caffeine poisoning."

A. Well, it is from Cushny and Van Oss.

Q. Well, I ask you what you mean by the use of the expression, first I ask you if that is the quotation in the text book or in your language which I read and which the text book shows ——

A. (Interrupting.) The text book shows that it is an abstract from what Cushny and Van Oss say.

Q. Well, do you include any portion of the text which I read there in the quotation marks to show you have taken it from some other work?

A. I doubt if you will find a qotation mark in the whole address.

Q. Yes, my simple question was not for your opinion; now as to the authenticity of Cushny's expressions or anybody else's; what did you mean when you used the term caffeine poisoning in that address?

A. What did I mean?

Q. Yes.

A. I meant that it was from Cushny and Van Oss—they undoubtedly used the word poisoning. If they had not used the word poisoning, it would not have been put in the abstract.

Q. Then you yourself did not mean to use the term as coming from you, but as coming from the two authorities which you quoted?

A. Yes, sir; absolutely.

Q. Cushny is a recognized authority?

A. He is a very able man.

Q. And a recognized authority?

A. Yes, sir; on pharmacological; and in pharmacology the word poison is used in the restricted sense.

Q. Who is Van Oss?

A. I don't know Van Oss.

Q. Why were you quoting from a man when you did not know him?

A. Because the article appeared under the name of Cushny and Van Oss, and it may be that Van Oss is a student or assistant of Cushny. Cushny's name would carry weight.

Q. Now, referring back to your book, it was written for the information of practicing physicians and not for instruction in laboratory experiments?

A. Not for practicing physicians—it comes from three sources—it comes first, from the accumulated experience of physicians, it comes from laboratory experiments on animals, and it comes from careful reading of the combined experience of the literature and the clinic.

Q. I ask you, please, to answer the question, that is, whether or not your book was written to circulate for the benefit of the medical practictioners?

A. That is a book for the instruction of students. The medical practictioner will find it a little too elementary.

Q. What character of students, medical students?

A. Medical students, yes.

Q. Would there be any difference physically, Doctor, as to the manner in which caffeine comes in contact with the muscle, whether directly or through the medium of the blood stream?

A. Yes, sir.

Q. What would that be?

A. In direct contact with the muscle, you can have not only the physiological effect, so-called, but you can have a contact effect or direct chemical effect upon the muscle, and in direct contact with the muscle, you can have a massive effect, whereas, by dissolution of the caffeine to the muscle by the blood stream, it comes more slowly and the doses cannot be so massive.

Q. Well, that would be one only differing in degree, in so far as the physiological action is concerned.?

A. It would be different in degree and somewhat in kind.

Q. Now, I have just looked at the preface of your book, where you say it was intended for students—and I find this statement signed by the author:

The Court: I don't see the purpose of it, why that has anything to do with it.

Mr. Miller: Well, he states it was written for medical students.

The Court: Well, that is immaterial. He has expressed his opinion for whatever it may be worth.

Mr. Miller: I simply want to state that it says it was written—

The Court: Well, that is immaterial.

Mr. Miller: It would be in contradiction of him.

The Court: He stated that it was too elementary for the general use of physicians.

Mr. Miller: I respectfully except — I would like to have the statement that I referred to in the book, made a part of the record.

The Court: You may show it.

BY MR. MILLER:

Q. Is the increased flow of urine due to the action on the kidney, of benefit in a healthy person who is passing the normal amount of urine?

A. It is neither one nor the other. A person in health who is drinking more beer than is necessary, a flow of urine is very beneficial to him, and relieves his blood pressure. It does no harm to the man, in fact he gets rid of the excess of beer in that way.

Q. Then, you are an advocate of passing more than the normal amount of urine, as I understand it?

A. No, not unless—why no, I am not an advocate of it. In certain instances, it is a very proper thing to do.

Q. That is where a man needs this as a therapeutic agent, but I am speaking of a man in normal health?

A. It won't do him any harm if he passes a little more water.

Q. Well, that is what I want to ascertain.

A. Yes.

Q. Then, if I understand you correctly, a constant stimulation of the kidneys beyond the normal function is without appreciable effect?

A. It would be very hard to get any appreciable effect from it, by that, you mean structural effect, I suppose.

Q. Now, this caffeine that you took or have consumed, from four to six grains per day, is that in the form of coffee or tea?

A. I take two cups of coffee in the morning at eight o'clock. I usually get a cup of tea with my luncheon at two o'clock or as near after as I can get it, and I have an after dinner cup of coffee with my dinner at seven o'clock.

Q. At seven P. M. ?

A. Yes, sir, and sometimes get it at night, if I happen to be up, I will take five or six grains of caffeine to keep me awake.

Q. Is that the alkaloid?

A. Yes, sir.

Q. Now, you stated, I believe, that in your opinion the average adult person, or at least in certain adult persons, four or six grains might be taken as a beverage without deleterious effect?

A. Yes, sir.

Q. Without harmful effect?

A. Yes, sir.

Q. Now, that much would be contained in these cups of coffee and tea that the average person would take if he took one with each meal, would it not?

A. Yes, sir; of course the proportion of the tea and

coffee and the quality of the tea and coffee used, causes the amount alkaloid to vary, but as ordinarily made, with the skill of the average domestic servant, that is estimated as about the quantity.

Q. That you would get in one cup at each meal?

A. Yes, sir; about.

Q. Do you read German, Doctor?

A. Not as well as I would like to.

Q. I say, do you read it?

A. I can read it.

Q. Referring to page 577 of Kunkil, the passage marked state if it is not true that the author lays it down there that the stimulation of caffeine is deleterious where the caffeine or the stimulus is used in the case of a normal man. You might read a literal translation of that to the stenographer, if you will. There are only three or four lines.

A. A free translation is that it is not worthy that with somewhat larger doses used for diuretic purposes, there as signs of kidney irritation — cylindrical casts, a slight quantity of albumen, the renal epithelium there is a question — apparently one should not go above the dose of from seven to eight tenths of a gram. That is from nine to ten grains I should say.

Q. That is a therapeutic dose, as recognized there? That is what is recognized as a therapeutic dose, is it?

A. Well — Yes.

Q. In that connection, did you so understand it?

A. The opinion of this author in a book, written at some time previous to 1901, and under which date, 1901, appears on that page, would appear that he did not consider it proper to go above ten grains as the daily quantity of caffeine to be ingested.

Q. I say that is the therapeutic dose—

A. He says caffeine, but it is loosely written, and it may be caffeine in beverage form, or otherwise.

Q. Does the author there distinctly state as a diuretic?

A. Yes. sir; he so states.

RE-DIRECT EXAMINATION
BY MR. SIZER:

Q. How much did you say, seven-tenths or eight-tenths of a gram would be in grains?

A. Well, a gram is fifteen grains and nine-tenths would be about ten and a half.

Q. And eight-tenths would be what?

A. Would be twelve grains, I beg your pardon for not answering Mr. Miller correctly mathematically.

Q. You said on cross-examination that the word "poison" in works of toxicology is used in a restricted sense. Explain what you mean by that?

A. Strictly speaking in pharmacology, where drugs are used upon healthy animals for experiment, everything that is done to them is a poison, because it changes the normal, light, and sunshine,—the picking-up of a guinea pig in your arm and dropping in ten drops of distilled drops of distilled water is a poison, because it is foreign to that animal—

Q. You say that these statements which Mr. Miller quoted from your book as to the effect of caffeine upon the heart and so forth, was based upon laboratory experiments You mean that these experiments were conducted by yourself, or explain whether you mean that you read of them in the literature?

A. Experiments I have read of. I have not done any laboratory experimenting since my old days in Paris.

Q. Were those experiments conducted on animals by the application of caffeine directly to the muscles?

A. I should judge from the context yes, to judge from the context, yes.

Q. And the effects of caffeine as applied directly to the muscles, you say would be different from what it would be when taken into the mouth?

A. A difference of quality—a difference of quantity—

Q. Did any physician observe your symptoms at the time you took those 42 grains of caffeine?

A. Yes, sir.

Q. Well, who was that?

A. Doctor Satterthwait.

Q. Did he have any instrament there by which he recorded your heart beat?

A. He did.

Q. And things of that kind?

A. Yes, sir.

RE-CROSS-EXAMINATION.

BY MR. MILLER:

Q. What is the difference in the qualitative effect by the administration of this drug into the stomach where it is absorbed into the blood, and injecting it into the blood?

A. You have the changes that go on with almost all chemical substances in the blood. There is a breaking down in the blood or in the organ of almost every chemical substance that goes into the body. It is not known in a great many instances where these changes take place, and it is unlikely that a loosely-held chemical combination like caffeine which will disassociate even with water, is likely

to pass unchanged into the blood and reach the muscle with any great degree of energy and produce any great result.

Q. Have you any authority for that statement as respects caffeine?

A. We know that chemically it is a very unstable substance, and it disassociates very rapidly.

Q. Kindly give us the authority for that statement as respects the blood.

A. There is reasoning by analogy that a substance which breaks up easily, even in water, is not likely to go through the complex fibers of the body without change. It would be extremely improbable if it did it.

Q. Can you point us to any reputable authority for that statement as respects caffeine, the action of caffeine when it is put into the blood stream?

A. We only know the end results—that it is excreted probably as xanthine products.

Q. That is based on literature and experiments?

A. Yes, sir; but where the change takes place I presume no pharmacologist has ever put his finger.

Q. Do I understand you to state that caffeine is readily disassociated in water?

A. I am speaking of the alkaloid.

Q. Of the alkaloid?

A. Yes, sir.

Q. Now, will you give us the authority on that point?

A. It is so stated, I think in most of the books.

Q. Well, just give us a few of them.

A. I think if you will turn to the companion volume of that pharmacology and theapeutic annual and materia medica you will find the statement and I think any authority will confirm it. It is a statement that is common in all books, just like a great many other common statements, and it is very hard to get their origin.

Q. Are you referring to citrate of caffeine or the alkaloid itself?

A. To the alkaloid.

Q. And the only authority you care to state is that you think that appeared in the companion of your own production?

A. Yes, sir; I think you will find it is said in there because I think you will find it stated in other books. I am sure I did not devolve that statement out of my own brain.

Q. Is not the companion you speak of the edition I have of 1907, or 1906?

A. They were both printed the same year.

Q. If it is in one, it is in the other?

A. You have a copy of the United States and the National Dispensatories and you could easily see whether my statement is correct or not. I believe it to be correct.

Q. Well, we think it is incorrect, but I am asking you about your book, if it is found in one edition it would be found in the other?

A. Well, I believe that to be correct; yes, sir.

(Whereupon a short recess was taken.)

(AFTER RECESS.)

Mr. Miller: Doctor Wilcox desires to make a correction in one of his answers.

DR. REYNOLD WEBB WILCOX,

recalled as a witness herein, resumed the stand and testified as follows:

REDIRECT EXAMINATION,

BY MR. SIZER:

Q. Do you desire to make any correction of a statement you made?

A. I do. Your Honor, I unwittingly made an error in my testimony which I desire to correct. On reference to the Dispensatory I find I was in error and that caffeine is disassociated from water, especially in the presence of the salts, the citrate alkaloid. That was a slip of my memory.

RE-CROSS EXAMINATION,

BY MR. MILLER:

Q. So that those statements of yours that were based on the assumption that it was readily disassociated were incorrect in so far as they were based on that assumption?

A. They were incorrect in so far as based on the relative case of disassociation of caffeine as a salt. They do not exclude the general principle that complex alkaloid disassociates in the blood stream and other places. The statement is relatively of less value in connection with the salts.

Q. Is strychnia when taken excreted as strychnia?

A. That is a question I am not prepared to answer. The difficulty of determining that is the small amounts in which strychnia is taken and which renders it difficult to get it back from the urea.

Q. I want to get back to a question. What is the difference in physiological action between the introduction of caffeine or caffeine citrate into the blood taken into the stomach and having it absorbed into the body — what is the difference physiologically, if any?

A. I think your question is not clear.

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Q. I ask you whether or not there is any difference from the standpoint of the physiologist as to the action of caffeine, whether it be administered by way of mouth in so far as the blood and muscles are concerned or whether it be injected into the blood or into the muscles, and if so, tell us what it consists of.

A. There are three things concerned. If you inject it directly into the muscles, you get a local effect, and also you get the mechanical effect of the puncture of the needle in the muscle, which will of itself produce contraction. If you inject it into the blood directly, you have an effect of less degree than injecting it directly into the muscles. If you take it by mouth and it passes through the stomach and is subjected to the action of the digestive fluid, you have still a less quantitative effect and quite likely a less qualitative effect.

Q. The effect is purely one of degree?

A. Purely one of the degree with the possibility of change before it reaches the muscle when it goes by way of mouth.

Q. You say with a possibility of change, that means you do not know?

A. It is approximately a reduction to xanthine bodies, takes place in the blood. As I said on cross-examination, nobody has put his finger on where that change takes place.

Q. If there be a change in the xanthine bodies, do those bodies act on the muscles?

A. Presumably they do.

(Witness excused.)

DR. THOMAS E. SATTERTHWAITE,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Are you a practicing physician?

A. I am.

Q. Of how many years experience?

A. Forty-four.

Q. Where do you live?

A. New York City.

Q. Do you know W. R. Wilcox, who just testified?

A. I know Doctor R. W. Wilcox.

Q. Were you present and attending Doctor Wilcox a

few days ago at the time he took a large quantity of caffeine, that he has testified about?

A. I was.

Q. For what purpose were you there?

A. I was asked by him to test the action produced on his circulation and respiration by taking a certain amount of caffeine.

Q. You were present when he took the doses?

A. I was.

Q. What were the respective doses and the respective intervals between which he took them?

A. Forty-two grains. The first dose was a dose of ten and a half grains.

Q. At what hour did he take that?

A. I shall have to refer to my notes. The first dose was taken at 3:04 in the afternoon.

Q. And the second dose?

A. Was taken at 3:27.

Q. What was the amount of that?

A. Twenty-one grains was the second dose and ten and a half grains the first dose.

Q. What was the next dose and when taken?

A. The next dose was ten and a half grains, taken at 3:54.

Q. And the next dose?

A. That was the last dose.

Q. Did you have an instrument there by which you recorded Doctor Wilcox' heart action before he commenced taking and while he was taking?

A. I had an instrument by which I took the control, as we call it, of the action of the heart and the blood vessels combined, in each instance prior to his taking the drug.

Q. For how long after he had taken the caffeine did you continue to take these records?

A. I took the records twenty minutes after the first dose, at 3:24. At the second dose of twenty-one grains, I allowed an interval of twenty minutes to elapse before taking the tracing, and the third I allowed another twenty minutes to elapse before I took the tracing.

Q. The last tracing was twenty minutes after the last dose?

A. Exactly.

Q. Without going into the details of the experiment, unless asked on cross-examination, what effect did you observe produced on Doctor Wilcox' heart action by the doses he had taken?

A. The result of the first amount of caffeine alkaloid was that the force of the heart and at the same time the

muscles, by the methods I took, show that the force of the heart plus that of the vessels, — showed that it increased the regularity of the heart; that is, it removed the irregularities in force to a considerable extent.

Q. What was the difference in the force and strength of the heart?

A. Increased it.

Q. Now, the next one?

A. The next effect produced was a sudden rise in the pulse to 84, and the respiration also rose to 24. The normal pulse beat is 72 and the normal respiration 16 — ranging to 24.

Now, the result of the second dose, the twenty-one grains, only one out of seven beats was deficient in strength showing a remarkable increase in the strength.

Q. How did that rise in the temperature?

A. Not temperature.

Q. Didn't you say there was a rise in the temperature?

A. No, sir; there was no change in the temperature.

Q. What was that?

A. There was a rise in the pulse rate.

Q. How long did that rise continue?

A. That fell within an hour to sixty.

Q. Is that normal or not?

A. It is normal for the subject.

Q. You have known Doctor Wilcox a long time?

A. A long time.

Q. What was the condition you found on the next — that was, after the final dosage, after this 21 grains?

A. After this 21 grains had been given at 3:27, the final dose was given at 3.54. Afterwards the pulse fell to 60, and the respiration which had been 24, fell to 16, natural and normal respiration, natural and normal individual.

Q. What would be the conclusions you draw from the observation as to the action of caffeine on the heart taken in quantities in which Doctor Wilcox took it?

A. The conclusion of this series of three experiments was that the pulse rate rose first to 84, — first to 70 and then to 84, and the respiration increased a little, but with the last dose it fell to normal, and the respiration fell to normal. At the same time at the end the irregularity in the force of the pulse was eliminated. It was practically of even force.

Q. I believe you say you practiced medicine for a number of years?

A. Yes, sir.

Q. Have you had occasion in your practice to observe the effects of the use of caffeine in the form of beverages

on your patients and acquaintances?

A. I have, of course, done so.

Q. As taken in the form of beverages and moderate quantities, what effects are produced by the use of caffeine?

Mr. Miller: I object to the form of the question because it does not state what the moderate quantity is.

The Court: Let the witness define what he means when he uses the term "moderate quantity."

Mr. Sizer: I was going to put that in the next question, but I will let him answer that in this question.

BY MR. SIZER:

Q. In your answer state what you mean by "moderate quantity" to be taken in the form of beverage, per day.

A. I think a moderate amount of caffeine to be taken in the beverages would be five or six grains per day.

Q. And the effect of that would be what?

A. I think the effect would not be harmful; it would be agreeable and quite stimulating.

Q. In the case of excessive quantities of caffeine being taken, are the results permanent or temporary?

A. I have known of no permanent ill effects from the taking of caffeine in any kind of dose.

Q. Do you personally use caffeine?

A. Yes, sir.

Q. In what kind of beverages?

A. Coffee and tea.

Q. For how long have you done so?

A. All my life, since I was ten years old, I suppose.

Q. In what quantities?

A. I always take one or two cups of coffee in the morning, sometimes a cup after dinner, coffee in the evenings, not always.

Q. Has this use of caffeine in the form of beverages ever affected your health in any way so far as you could observe?

A. I think there are occasionally times when a cup of coffee, if taken stronger than usual, will increase nervousness a little.

Q. Is that the only effect it has ever had on you personally?

A. It has nothing but a temporary effect on me.

Q. Have you had occasion in the course of prescribing for your patients, to recommend the discontinuance of tea or coffee for any reason, and did you have any difficulty in inducing them to discontinue?

A. None whatever.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. To what did you ascribe the nervousness due to the taking of the extra strong cup of coffee?

A. I think it is a nerve stimulant.

Q. What is a nerve stimulant?

A. Something that makes the cerebro-spinal system more active; that is, more active, gives an increased tone to your muscles.

Q. I ask you what substance does that.

A. Substance?

Q. Yes — what substance are you talking about?

A. Caffeine.

Q. That is what I wanted. Are you a member of the American Physiological Society?

A. No, sir.

Q. Are you a member of the Society of Pharmacology and Experimental Therapeutics?

A. No, sir; I am not a pharmacist or pharmacologist.

Q. You do not profess to qualify as either?

Q. You do not qualify as a pharmacologist or physiologist?

A. No, sir.

Q. Now, as a physician, what do you say might be the result of the increased blood pressure over the normal?

A. The subject has not been brought up and I have not alluded to it.

Q. I thought you said there was a rise in blood pressure in Doctor Wilcox' case.

A. A rise of interference, not of blood pressure. As we talk of it by blood pressure, it is taken by an instrument and I made no such test.

Q. You didn't make any test?

A. I made a test by the graphic method but not by the blood pressure test.

Q. You would not undertake to say whether there was a rise in blood pressure or not?

A. I would like to explain that I have not made any test as to the blood pressure, except by the graphic method which is not the method commonly employed for blood pressure.

Q. Then, based on that experiment, you would not want to state whether there was any increase in blood pressure or not, because it is not reliable?

A. It is reliable, but so far as that is concerned, I would be willing to state that there is an increase in blood pressure.

Q. Stating that there is an increase in blood pressure,

I ask you if that of itself may not cause exhaustion of the heart.

A. Well, the matter of blood pressure in this case is a temporary matter. If it were continued, it would.

Q. Then it is possible for it to do so?

A. If it were continued.

Q. And it may cause edema of the heart muscles?

A. That I do not know anything about. I never knew it to.

Q. You are not prepared to answer? Does not a continuance of high blood pressure cause arterial degeneration which is changes in the blood vessels? In other words, it produces a thickening?

A. It produces a thickening in the blood vessel, but whether it produces arterial degeneration is a question that is undecided.

Q. By thickening you mean arteriosclerosis?

A. One form of arteriosclerosis is produced by continued high pressure.

Q. A thickening of the artery?

A. Yes, sir.

Q. Now, what character of instrument was this that you say you used in making this test?

A. Shall I show it? I have a diagram of it.

Q. Yes, or you can tell us briefly. If you give the name of the test we will probably recognize it.

Mr. Sizer: We said it was the graphic test.

A. There is no diagram of it in existence. This is an instrument devised by myself and it has never been published. I am preparing to publish it now and I think I can show it. It consists of standing on an ordinary office or bathroom scale. The person who is to be tested stands on the platform scales as if he were going to be weighed. The impulses of the heart and vessels course through the body to the feet and they are in turn carried to the platform, and from the platform through the upright up to here where there is a pointer like the pointer used for the purposes of weighing only on that pin is put a large long pointer which records the rate and the force and the regularity of the heart beat on a drum — moving drum, the ordinary drum used in physiological laboratories; a couple of varieties of them are used, — actuated by a clock, so that as the person stands on the scale the dial automatically registers the heart action by the communication of the heart's force to the feet and to the platform and up to this lever. Anyone who stands on that bathroom scale by looking at the dial or the oscillations of the pointer can see them. That is the idea, simply carrying that idea out to move the drum and

on the paper register the three points that I have spoken of. At the same times we have another marker running with it which registers the time on the dial so that you can count from the chart the pulse.

Q. Will you file that illustration as Exhibit No. 1 with your testimony?

A. I will file it; I have it marked as Exhibit "A".

Q. That will do; let it go in that way.

(Document received in evidence.)

A. All right.

Q. Did you make any experiment with Coca-Cola?

A. No, sir; I have not.

The Court: Does the subject have to stand barefooted on this scale?

The Witness: No, sir, not necessarily. The pulse would be communicated perfectly well through the shoe.

BY MR. MILLER:

Q. Have you ever compared the method that you have devised which you say has not yet been given out to the world with the standard methods?

A. I have used most of the standard methods.

Q. I asked you whether or not you have ever made a comparison on the same patient of your method with what are recognized as the standard methods by your profession.

A. I use some of the methods in conjunction with this. That is, this instrument is designed to take the jugular and the liver pulse and the movements of the heart, all of which are taken by instruments somewhat different but are used in connection with mine. My instrument is one to automatically make the record. I am working now on several instruments used in connection with mine.

Q. You have never compared the standard methods with your methods to ascertain what if any difference there would be in the results, have you?

A. I have put the tracings of other instruments alongside of mine on the drum, yes.

Q. My simple question was whether you ever had compared the others with yours to ascertain the difference, if any, in results, and if so, on the same patient, tell us what the difference was.

A. There is no difference in the time or in the waves that are produced, except that each instrument has its own particular way of registering, the same way the electric cardiac machine — the waves are shown in some different way.

Q. My question is whether or not you have ever compared your method with other methods on one or many pa-

tients to ascertain the difference in the results, if any.

A. I have not undertaken any series of comparisons. I am working on that now.

Q. Have you written a book on caffeine effects, or that deals with caffeine as a drug?

A. I have alluded to it in a book of mine on diseases of the heart and aorta.

Q. Have you that book with you?

A. I have.

Mr. Miller: I would be glad to have that passed to me. I am going to ask leave to re-examine this witness and recall this witness.

Mr. Sizer: You can examine the book and if you desire to recall the Doctor, let him know so that he won't leave.

The Court: There will be thirty minutes before adjournment and some one of you can examine the book.

(Witness temporarily excused.)

DR. HAROLD N. MOYER,

the next witness called on behalf on the claimant and intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. You are a practicing physician?

A. Yes, sir.

Q. Have you written any books?

A. No, sir.

Q. I thought if you had, I would get you to hand them to counsel now. Where do you reside?

A. Chicago, Illinois.

Q. How long have you been practicing?

A. Thirty-one years.

Q. State your medical education and qualifications.

A. I was educated at Rush Medical College, was graduated from there in the medical department of the Chicago University; then I had service in the Illinois Eastern Hospital for the Insane for three years; after that I was in Europe, studied two years at the Universities of Vienna, Heidelberg, Berlin, and after that I returned to Chicago and became connected with the Rush Medical College as teacher, first of the department of Physiology, and then of the department of Nervous Diseases, and continued in that connection until the early nineties. My experience as a practitioner comprehends my hospital service and my private practice. I have been connected with our large public

hospital, called the Cook County Hospital, the largest one we have, with the St. Luke's Hospital, with the Columbus Hospital, and then my private practice; and I will state that since 1892, I have restricted my practice almost exclusively to nervous mental diseases, that is, insanity and nervous diseases.

Q. You have made a specialty of that particular branch of the science?

A. Since 1892.

Q. Are you a member of any medical societies, and if so, what?

A. I am a member of the local society in Chicago. I have been President of the Chicago Society, also the Illinois State Medical Society. I am a member of the American Neurological Association, an association of physicians of national extent, that is, it is a national association for those who devote attention to nervous diseases.

Q. What is the effect of caffeine on the nervous system?

A. It is a nerve stimulant.

Q. Is a nerve stimulant of itself injurious or detrimental to health?

A. Not necessarily.

Q. Does the question of whether it is detrimental to health depend upon the degree of stimulation?

Mr. Miller: I object to that. I think it is suggestive.

Mr. Sizer: I want to get that point in.

BY MR. SIZER:

Q. Does the question of whether the effect of stimulation is detrimental or not depend or not upon the degree of stimulation?

Mr. Miller: That is open to the same objection, it suggests the answer.

The Court: I think the witness can tell what the effect is. I don't see any other way of directing the witness's attention to the point that is desired, and I don't see your objection.

Mr. Miller: Note an exception.

The Witness: Yes, sir.

BY MR. SIZER:

Q. Is caffeine a normal or abnormal stimulant for the nervous system?

Mr. Miller: I submit he is not qualified to speak on that point.

The Court: I overrule the objection.

The Witness: It is as near a normal stimulant as we have.

BY MR. SIZER:

Q. What would be the effect of doses of caffeine or quantities of caffeine, taken in the form of beverages from day to day, on the nervous system, the quantities being moderate, and in your answer you can state what you mean by a moderate quantity.

A. By moderate quantities I would say beverages containing somewhere from four to six grains of caffeine taken in a single day, would be mildly tonic or stimulating to the nervous system, and would not have an unpleasant or uncomfortable result in the average person.

Q. What would be the effect on the nervous system of increasing the quantities from four to six grains a day to something more?

A. The stimulating effect would probably be greater. The number of persons who would experience discomfort or uneasiness from such larger doses, would be increased, but to how large a dose or how many, I could not say, and it might be that they would feel apparently benefited by it.

Q. What quantities would you say could be taken?

A. I should say up to eight or ten grains could be taken.

Q. In case a person takes a sufficient quantity of caffeine in this manner to unduly stimulate the nervous system or to produce these symptoms you speak of, would that result be experienced be of a temporary nature, or a permanent nature?

Mr. Miller: I object to that. He can tell the facts.

Mr. Sizer: He has described the effects, and I asked him would they be permanent or temporary in his opinion as an expert.

The Court: The objection is overruled. He may show in his answer what he means by temporary or permanent, if there is any doubt about that.

The Witness: The effect of beverages of that character in those doses are temporary and not permanent.

BY MR. SIZER:

Q. What do you mean by temporary. How long would the effects of the excessive dose and undue stimulation continue?

A. Only so long as the substance remained in the system. It is not very long, a few hours.

Q. A few hours?

A. Yes, sir.

Q. Does the use of caffeine in the form of beverages tend to form any habit?

A. No, sir; it is not habit-forming.

Q. Have you had occasion in your practice to prescribe the discontinuance of caffeine-containing beverages from time to time?

A. Occasionally.

Q. Do you experience difficulty in inducing the patients to discontinue their use when prescribed?

A. No, sir; I have never had any difficulty in getting them to quit.

Q. Is the effect of caffeine-containing beverages on the nervous systems of younger people necessarily or any greater than on older people, that is, in proportionate quantities?

A. Do you mean by young people, children or youths?

Q. Make your answer to cover both.

A. The effect on young persons, meaning by that those 14 to 20, is not different from what it is in those more than that age. The unusual exceptional effects of caffeine beverages are more noticeable in those who are from 25 to 40 — in that period of life — than in the young, the young tolerate these beverages rather better than those further along in life.

Q. Are caffeine-containing beverages prescribed as part of the diet in the hospitals with which you are connected?

Mr. Miller: I object to that as irrelevant.

The Court: The objection is overruled.

The Witness: They are a part of the diet in all the hospitals with which I am connected, that is, they are served to throughout the hospital unless restricted by the physician's orders.

BY MR. SIZER:

Q. And that restriction would apply to specific cases only?

A. Oh, yes, just to specific cases.

Q. Except when restricted by a physician in charge of the particular case, is there any limitation put on the amount given to patients other than what they want?

A. Well, yes, I think the general rule in the hospital is to restrict them to the quantity that is served, that is, they get a cup of tea or coffee and that is usually what they get.

Q. Does the use of caffeine ever result in insanity or in disordered mind?

A. Not in my expierence.

Q. You are familiar with the mixture Coca-Cola, are you?

A. Yes, sir.

Q. What is the effect of the syrup and the other ingredients contained in the Coca-Cola syrup in preventing or discouraging of the taking of too much of the substances?

The Court: That is irrelevant.

BY MR. SIZER:

Q. What effect would the other ingredients contained in the Coca-Cola syrup, for instance the sugar, among other things, have on the quantity of the syrup that could be taken or that ordinarily be taken?

A. I think it would limit the quantity that is ordinarily taken. In the first place, because it is sweet, and then sugar is a food, and it is rather filling, that amount of syrup, in common language.

Mr. Miller: Now, I object to that answer because this witness has not qualified himself as a practitioner of medicine but only as a nerve specialist, and he is not prepared to say, I submit, as to the administration of these other substances. If it is conceded that I can cross-examine on these things, all right.

The Court: The question of cross-examination is one that will come up at the proper time and be disposed of. The question now is as to the admissibility of this evidence, and the objection is that he is not qualified. I understand the witness to state that he was only a specialist of recent years, but before that had been a general practitioner, and I overrule the objection to the answer.

Mr. Miller: Now, before taking up the cross-examination, I wish to ask the gentleman who was on the stand last, who wrote that book, and I will ask that this witness be temporarily excused.

(Witness temporarily excused.)

DR. THOMAS E. SATTERTHWAITE,
recalled for further

CROSS-EXAMINATION,
BY MR. MILLER:

Q. I find in your book this statement as respects caffeine, in the copy which you so kindly furnished: "Primarily caffeine produces cardiac contractions". That means of the heart?

A. Contraction.

Q. "Leading in large doses and with some persons to spasms and even paralysis".

That is true?

A. I believe that to be true.

Q. "Secondarily, its effects are depressing while it has proved an uncertain diuretic in my opinion".

A. Yes, sir.

Q. Those statements are substantially correct?

A. Yes, sir.

Q. This work is entitled "Diseases of the Heart and Aorta"?

A. Yes, sir.

Q. And was written for the practicing physician?

A. Yes, sir.

BY MR. SIZER:

Q. Is there any harm or detriment to the health caused by contraction of the heart?

A. Not necessarily, the heart is contracting all the time.

DR. HAROLD N. MOYER,
then resumed the stand for

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What do you mean by normal stimulant, as used by you in your examination in chief?

A. I did not use those exact words.

Q. Didn't you state that caffeine was as near related to a normal stimulant — that is caffeine beverages — as any other beverage?

A. I said they were as near normal stimulants as we have.

Q. I ask what you mean by normal stimulant?

A. I mean by normal stimulant foods of various kinds, and particularly those foods that are derived from meat, such as the meat juices and extracts. They are nerve stimulants, but these caffeine bodies, so far as my experience goes, are very like those.

Q. That is what you mean by saying a normal stimulant, extracted matter from the meat which you can press out?

A. That raises an entirely different question.

Q. Do you mean xanthine products from the meat?

A. I did not say that.

Q. Do you mean it?

A. I am not an authority on xanthine bodies.

Q. Then you are not much of an authority on what is a normal stimulant?

A. That may be possible. I am giving you the best I have.

Q. Why is the restriction of one cup of coffee or tea at meal times put on patients that you referred to when you stated that there was a restriction?

A. I said I thought in the practice of the hospital there was a restriction, not specifically, but I know that food is served in hospitals in certain quantities to patients and

they rarely get more than a cup of tea or a large cup of coffee at meals, and they have to ask for more if they get it. Now, at the Cook County Hospital, the County has a much larger cup, they have a tin cup holding about two-thirds of a pint. That is much larger. That is a big pauper hospital in Chicago.

Q. You have not answered the question as to why the restriction was placed on the use of these beverages?

A. Oh yes, I have. I have answered it quite as accurately as I can. The effects of hospital administration dietary is what substantially restricts it. There is not a pot of coffee on the table or bedside of the patient for him to take as much as he wants, as it commonly the case in domestic practice. That is what limits the quantity.

Q. Have you ever had any experience in the administration of Coca-Cola?

A. I have taken some myself.

Q. You have not prescribed it for patients?

A. I never prescribed it for patients.

Q. Now, when you state if the patient gets from four to six grains a day in beverages it may not have any harmful effect on the nerves, you mean, of course, in beverages such as coffee and tea where you have seen it served, is that right?

A. I mean caffeine-containing beverages.

Q. Suppose he received it also in his bread; would that make any difference as to whether it was cooked up with the bread or taken in a beverage?

A. You mean caffeine cooked up, baked up in the bread?

Q. Yes.

A. I have not any experience with such preparations.

Q. Can you conceive of any different effect that the caffeine would have on the nerves if a man would eat it in the form of bread, mixed up and cooked up with bread, than when it was distributed in or served with a drink?

A. I do not know whether it could have any different effect or not.

Q. You are not prepared to answer that?

A. I said I didn't know.

Q. These symptoms that you have described as respects the muscles, and whether or not they are permanent or temporary, you acquire that knowledge by simply observing the persons who drank coffee or tea?

A. I have not said a word about muscles.

Q. I thought you said the effects or symptoms, which would be the effects — would be temporary rather than permanent.

A. That is what I said.

Q. You do not attempt to deal with the muscles at all but merely the nerves?

A. I have so far only spoken of the effect on the nervous system.

Q. Are those effects the effects that you have observed in persons who drank tea and coffee?

A. Yes, sir; the effects on the nervous system with patients I have had. I tried to find out what the tea and coffee did to them.

Q. And the effect was that it made them more nervous?

A. No.

Q. Didn't you use that expression a while ago?

A. No, sir.

Q. Did you say that the caffeine in those drinks exhausted or stimulated the nerves?

A. I said it stimulated the nervous system.

Q. Did you say that that includes the spinal cord?

A. It includes the entire nervous system; the cord, the brain and the nerves.

Q. Did you ever make any test to ascertain how long the cord was stimulated as the result of the administration of caffeine in this way?

A. Yes, I have.

Q. What test did you make?

A. I tested it on myself.

Q. How did you make the test on yourself to see whether the cord was stimulated?

A. I tried this Coca-Cola syrup in some long walks I made. On one occasion I started to take a ten-mile walk and after the first mile — at the end of it I was moderately muscularly tired. I was not exhausted but I felt as if I would like to sit down. Then I took an ounce of this Coca-Cola syrup and continued at the same gait as fast as I could and the pick-up, the tonic effect of that on my muscular system — obviously the spinal cord was involved in it — was very marked and I finished the next five miles strong and going easy, and so far as I was concerned I thought it was a pretty good stimulant to the muscles and spinal cord.

Q. I grant all you have said, but I asked you whether you ever made any observations to ascertain from your personal knowledge or anybody else, how long the effects of stimulation were present.

A. Yes, I think I did. I think that was present a good hour and a half. It lasted fully an hour and a half.

Q. You judge that only by your own feeling, not anything else?

A. Oh, yes; just by the way I felt.

Q. That is the extent of your observation to ascertain how long the effects of caffeine as a stimulant remained?

A. That is all.

Q. Do you know relatively what is the action of caffeine-containing beverages or caffeine, on the central nervous system and on the spinal cord, especially?

A. As distinguished from the nervous system as a whole, the cord alone?

Q. Yes.

A. No, sir, I do not, except I think it is tonic and moderately stimulating.

Q. That consists only of that experiment you made on yourself?

A. I have an opinion about it apart from that experiment but you asked me if I had ever tried anything and I had tried.

Q. Is it not true that the extent of the stimulation and the effect of it depends on the age and the size and the condition of the person to whom it is administered?

A. And the dose.

Q. Does it not depend first and regardless of the dose, on the sex, age and size?

A. Regardless of the dose? Oh, no.

Q. Do you mean to say that a child eight or ten years old, taking three or four grains of caffeine, would not be affected any more than a person who was twenty-five?

A. He might not be affected so much.

Q. I ask you what you think as a scientific man.

A. That is exactly what I am telling, what I think as a scientific man.

Q. Then you think that the effect on the child would not be any different from its effect on a grown person?

A. That is not what I said.

Q. What do you mean?

A. That it might not be so marked in the child as in the grown-up person.

Q. In your opinion, would it or not be?

A. I could not tell apart from the dose and apart from individual conditions.

Q. I have spoken of taking the same dose.

A. No, you didn't; I beg your pardon.

Q. Yes, I did.

The Court: He said independently of the dose.

The Witness: I didn't understand it. Give the question again.

BY MR. MILLER:

Q. I asked you to take the same dose in grains and give

it to a child.

A. Of what age?

Q. Say seven, eight, nine to ten years of age.

A. There is a great difference between seven and ten.

Q. What would that be as respects the administration of caffeine?

A. I think that caffeinated beverages are not wholesome for children. I mean by that, children of seven and under.

Q. You said there was a great deal of difference between seven and eight years.

A. No, sir; I said seven and ten. I say there is a period of three years there and a child of ten years is considerably nearer grown than a child of seven.

Q. If I understood you in chief, you stated that after fourteen there was not any marked difference between a person who received caffeine and a person of more mature years, as to its effect on the nervous system.

A. I think the nervous system from fourteen to twenty-one years is more likely to tolerate caffeine beverages than between forty and fifty years.

Q. Why did you draw the line at fourteen?

A. Approximately it is the period when children pass into the period of youth, fairly well grown, and they become more nearly like the adult as far as the action on the nervous system is concerned.

Thereupon an adjournment was taken until Wednesday, March 29, 1911, at nine o'clock A. M.

Chattanooga, Tennessee,
Wednesday, March 29, 1911,
Nine o'clock A. M.

Court met pursuant to adjournment.

Apparances: Same as before.

Mr. Miller: On yesterday morning I was credited by distinguished counsel with having asked for a list of authorities which recommended the use of caffeine-containing beverages in articles of diet, and it was stated that the list would be furnished which it was desired to be read in the record. That was the language of counsel. I was not prepared to speak as to what had taken place but I find on re-reading the record that this is the question that I did ask: "Q. Are you acquainted with any reputable treatises that advocate the use of caffeine, I mean medical treatises that advocate the use of caffine for general con-

sumption by general individuals?" That is the question I asked and I was furnished last evening with a list of authorities dating from 1863, some dealing with the history of coffee, and I submit that my question did not call for anything except treatises which recommend or advocate the use of caffeine. Hence I submit that this list of authorities is not responsive.

The Court: Do they advocate the use of coffee?

Mr. Miller: Well, that depends on cross-examination. They deal with the use of coffee, but my question was ——

The Court: I catch the question, but whether the books are the authorities that have been referred to? Is the point you are making the difference between caffeine and coffee?

Mr. Miller: To some extent.

The Court: You did not call for books that recommended coffee; you called for caffeine as an article of diet?

Mr. Miller: That was my question. I said caffeine for general consumption by individuals and I submit there is quite difference, as I think has been demonstrated by your Honor's ruling out certain articles because of certain other constituents. I think there is quite a difference between treatises which advocates the use of caffeine and treatises, if there be any, which advocates the use of caffeine-containing beverages. Hence I insist that this list was submitted was not in response to any question of mine.

The Court: The converse does not exactly follow. A thing which advocates an article containing two substances might not advocate the use of the separate substances. What do you say about that, Mr. Sizer?

Mr. Sizer: As I understand, and as I think the witness understood the question, he was asked to furnish authorities which advoate the use of substances containing caffeine and I suppose the authorities which he produced were in answer to that question. Counsel may cross-examine the witness further if he wants to. The witness has produced the authorities which as he understands was responsive to the question, and whether or not it is responsive is a matter for cross-examination.

The Court: He may show what authorities he produces and the purport as he understands them, and then if exception is made I sustain the exception on the ground that it is not responsive to the question.

Mr. Miller: I do make the objection. The text shows that I was asking about caffeine as a drug.

The Court: I sustain the exception and exclude the answer.

Mr. Sizer: I do not know that these authorities offered

by Doctor Vaughan do not advocate the use of caffeine, but I say my understanding of the question was and I assume it was the understanding of the witness that counsel wanted anything that recommended any article of food containing caffeine.

The Court: That is not the literal question. A man may recommend many things containing caffeine because there were other things, but I think the fair purport of that question was to get at authorities that recommended caffeine as such, or articles because they contain caffeine.

Mr. Sizer: The first authority, Bunge or Physiological and Pathological Chemistry, does recommend the use of caffeine.

The Court: Then that is responsive.

Mr. Sizer: Shall I read what he says?

The Court: No; go through the list and limit the list to those which recommend caffeine, and then you may offer it again.

Mr. Sizer: In order that your Honor may see whether this is responsive I hand it to your Honor. Here is another in German; I do not know whether your Honor will want to read that or not.

Mr. Miller: I have had made for the purposes of the reporter and everybody else a literal translation of the authorities and if your Honor cares to look over them you may do so.

The Court: Counsel may hand me the list and wherever the list recommends caffeine or recommends substances on account of the caffeine in it, I think it is responsive to the fair purport of the question but when it does not I do not think it is. I will look over the list and rule on it later.

Mr. Miller: Now we will proceed with Dr. Meyer. I wish to say that we had reference to only three of these publications by pages; the others were hurled at us indiscriminately, and I have taken what I thought was the fair statement.

Mr. Sizer: We will go over the abstract by counsel and if there is anything else in the authorities that refer to the subject, we will add it and hand the list to your Honor.

DR. HORALD N. MOYER,

recalled as a witness herein, resumed the stand for further examination and testified as follows:

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What did you mean yesterday by the average person when you referred to the quantities of caffeine being ad-

ministered an average adult person or the average youth, or the average child?

A. I think I must have referred to the average adult. I could not average adults and children together.

Q. Why not?

A. Because I do not think they are quite comparable as to size and I also meant to exclude those who have an idiosyncrasy to caffeine beverages, that is not usual; meaning by idiosyncrasy where caffeine-containing beverages do not agree with that individual.

Q. Excluding young persons and confining ourselves to adults, the answer you gave as to the effect of increasing quantities from four to six grains on the nervous system is that the stimulating effect would probably be greater in the number who would experience discomfort and uneasiness. What would be the discomfort and uneasiness experienced?

A. From the use of caffeine in the adult?

Q. Yes.

A. My observations with caffeine have not been made on well people. The larger doses of caffeine have been made on sick people in hospitals. When we give about six to seven grains three times a day, that is, from 15 to 21 grains a day, those patients complained of feeling uncomfortable, some of them say they have a misery, that their head does not feel good, that they do not like that medicine and such expressions as that — caffeine is given as a diuretic in hospitals to sick people.

Q. You further say in that connection it might be that they would feel apparently benefited from it and by that I infer that the men would feel as the result of the caffeine differently from what is the real physical condition; that is to say, it is a stimulant or excitement which makes him feel different from normal and from what he in reality is. Is that correct or not?

A. I am not prepared to deny your inferences. You infer from those words those things and I cannot say you do not infer them.

Q. I ask you what you mean by saying that he might feel apparently that he was benefited, what did you mean when you said that?

A. What were the exact words?

Q. The exact words were these: "The stimulating effect would probably be greater on the number of persons who would experience discomfort or uneasiness from such larger doses, would be increased, but how large the dose or how many I could not say and it might be that they would feel apparently benefited by it."

A. What was the question to which that was an answer?

Q. The question was what would be the effect on the nervous system of increasing the quantity from four to six grains a day to something more?

A. Something above that.

Q. Yes.

A. I think when you get above six or seven grains a day there is often experienced some discomfort on the part of the people who take it. That is what that means.

Q. Now, I understand that part of your answer but it is the next part that I do not understand. "It might be that they would apparently feel benefited by it." Do you mean that they would be benefited or simply feel that they were benefited as compared with their true condition?

A. Benefited as compared with their true condition?

Q. Yes; what do you mean by using the term that they would feel apparently benefited by it?

A. Just what the words say. Apparently they would feel benefited; that is what it means and that is what I meant when I spoke of what I took myself, that I felt as if I was benefited by it.

Q. Do you know how long the caffeine remains in the system or its effects remain in the system, of your personal knowledge?

A. Yes, sir; I think a couple of hours, two or three.

Q. What test have you made to ascertain how long the effects of caffeine remain?

A. Only judging by my clinical experience from administering caffeine.

Q. Did you ever test for it in the urine after it was administered?

A. No, sir; never.

Q. Then you have administered it to patients and they have gone away and come back and you base your experience on what they told you as to the facts, has that been the extent of your experience?

A. No, sir. Most patients to whom I gave it did not go away, they stayed in bed in the hospital.

Q. What were the noticeable effects for, say, two hours afterwards?

A. Administering a considerable dose, as I said, they frequently complain of some uneasiness and discomfort, but it does not last more than an hour or two.

Q. That is, they do not complain for more than an hour or two?

A. Yes, that is about all.

Q. Now, about youths from fourteen to twenty. I asked you if it is not a fact that at or about the ages of fourteen

and fifteen humanity, particularly in females, is among the most nervous conditions, — the people are in the most nervous state in their lives.

A. No, sir.

Q. Are you acquainted with Doctor Hamilton's work on nervous diseases?

A. No, sir.

Q. You know Doctor Hamilton who is here?

A. Yes, sir.

Q. You have been engaged with him here, he is engaged by the Claimant in this case?

A. Yes, sir.

Q. He is recognized as a standard writer on nervous diseases?

A. He is recognized as a writer on nervous diseases.

Q. I read you from page ninety of Doctor Hamilton's work.

A. In that medical jurisprudence work?

Q. A system of legal medicine.

The Court: What is the object of reading this?

Mr. Miller: It is to show that at the age of fourteen humanity is at its most sensitive period.

The Court: Did this witness say that it is not so?

Mr. Miller: If he admits that is true I will not ask him, but I understood him to deny that, but to make it clear —

BY MR. MILLER:

Q. I will ask you if the age of fourteen is not among the most nervous periods of people's lives and particularly females?

A. I said no to that.

Q. I read to you from Doctor Hamilton's book:

"One of the critical points of life when the mental equilibrium is most sensitive to disturbance is that of pubescence" and that means puberty which is about fourteen years?

A. Yes, sir.

Q. You disagree with that statement by Dr. Hamilton?

A. No, sir.

Q. Do you agree that that is one of the most critical periods and one of the most nervous periods of human life?

A. Not the most nervous; it is the most critical. He does not say most nervous there, but most critical.

Q. He said it was most sensitive?

A. Yes, sir.

Q. Is not that the most susceptible period to an agency like caffeine?

A. No, sir; I think not.

Q. The statement is when the mental equilibrium is most sensitive of disturbing agencies?

A. Does it say anything about caffeine in there?

Q. No, sir, it does not say anything about strychnine or anything else, but the statement is confined to the period when the mental equilibrium is most sensitive to disturbing agencies and I ask you whether or not in your experience it is true that this period about which I have been talking and particularly in the female, is the one when the mental equilibrium is most sensitive to disturbing agencies.

A. True.

Q. Isn't it true that any disturbing agency or without any stimulation of nerves that the female, particularly at that period, is liable to attacks of hysteria, or hysterical attacks?

A. Yes; women or girls who are of a nervous temperament are liable during that period to hysterical attacks, — that may be so, later or earlier.

Q. Now, as to that condition, don't you know that a nervous person or one who is liable to nervous attacks, is liable to have increased nervous irritability or reflex action as the result of the administration of caffeine?

A. I would like to have the question read.

Mr. Miller: All right; read, him that question, Mr. Hacker.

(The question was read, as follows: "Now, as to that condition, don't you know that a nervous person or one who is liable to nervous attacks, is liable to have increased nervous irritability or reflex action as the result of the administration of caffeine?")

A. I would like to know in what dose. I might ask — well, it is a very general statement, I do not believe that one-tenth of a grain would do anything to a nervous person, or even perhaps a grain, but I am sure the administration of six or eight grains of caffeine to a very nervous person would not be good for him.

Q. How about two grains? You say a tenth of a grain, that you do not believe that a tenth of a grain would, and possibly one grain would not, how about two?

A. I doubt if two grains would be likely to do anything uncomfortable and many nervous patients would be benefited by it. It is not very generally good for very nervous people to take caffeine in large quantities.

Q. By "large quantities" do you mean in excess of the pharmacopoeial dose of one grain?

A. Is that the pharmacopoeia dose, one grain?

Q. Didn't you know that?

A. I have heard it stated, I know it, yes. I think that

they can take more than the pharmacopoeial dose — that is an absurd quantity, a small quantity.

Q. How is a nervous person such as a girl fourteen years old in normal health, benefited by the administration of caffeine in one or two-grain doses?

A. I don't know that she is. I would not claim that she was. I don't know that anybody is benefited by caffeine as far as I know absolutely. Might be just as well off without it. It makes you feel better, that is all.

Q. Now, looking again to an answer, you stated the young tolerated these beverages better than those further along in life. By "tolerate" you meant built up a tolerance against caffeine?

A. No. They take care of it better. In practice of nervous diseases we often run on to people that do not take or tolerate caffeine beverages very well. Most of these fall within the period of 35 to 50 years. It is not among the young. They do not come to you complaining of difficulties of disposing of caffeine beverages; it is those older in life that get where they say they can't take it without being uncomfortably affected by it, those are the ones.

Q. And by "tolerate" in that question ——

A. (Interrupting.) That is what I meant, what I have explained — they take care of it all right.

Q. To take care of it all right?

A. Yes, sir.

Q. To take care of it all right is what you mean?

A. In other words, I mean it did not disagree with them, by the word "tolerate."

Q. Can you take caffeine so as to affect the brain without at the same time affecting the spinal cord?

A. I don't see how you could. I guess you affect the whole body with it.

Q. Now food — when that is taken, that affects the brain but that does not render a person more nervous ordinarily?

A. It depends on the kind of food. There are certain foods that disagree with people and make them very nervous, and some disagree with their digestion, foods they ought to digest and make them very uncomfortable.

Q. I am speaking of the average person and when you take the normal food and the normal exercise, if the average person's brain is stimulated by the activity, by food, is there any corresponding reflex irritation or stimulation of the cord?

A. Why, of course there is. The cord is stimulated by food — it must be.

Q. How is that irritability manifested upon the taking

of food in normal quantities when a person takes normal exercise and rest?

A. A desire for exercise, a desire for activity; that is how it is shown.

Q. Does food taken in normal quantities affect a person in the same way as caffeine?

A. That I cannot say. I think there are constituents of fact — the effect from which is very similar to caffeine ——

Q. (Interrupting.) Well, what?

A. Well, the constituent I mean is the extractives that are contained particularly in meat foods, to some extent in others and in some vegetable foods.

Q. And by these extractives you do not mean food?

A. Yes, sir, the juice that is in it. The juice of the beefsteak.

Q. That which is cooked out in the cooking process or exuded?

A. There is not anything cooked out; it is cooked in.

Q. Well, it is caused to go to the surface?

A. Oh, you mean the taking out in the form of beef broth?

Q. Yes.

A. That is the stuff that is stimulating, more than the ordinary food.

Q. Are you an authority on foods or do you claim to be?

A. No, I do not think that I am an authority on foods. I would be very glad to give you any information on the subject I have, if you want it. I do not want to restrict the questions here in any way. If I have any information and you want it, I am glad to give it to you.

Q. Well, I want to know if you profess to be an authority on foods, or what is a food?

A. No.

Q. You do not mean, do you, Doctor, that the juice of meat and the extract of meat are the same?

A. I think I used it in about the same sense.

Q. You mean in that connection that they are the same, in the connection in which you used them?

A. Yes, sir; I mean the substances that are in meat—I suppose they are in the juice of the meat, that is what I mean.

Q. Are they not what you call the extractives?

A. I guess I would call them extractive — that is my own idea — extractives, nobody else's.

Q. And by caffeine-containing beverages, you refer to tea and coffee?

A. Tea, coffee, and I think it is mentioned in chocolate

also, that is caffeine is, and Coca-Cola is a beverage that seems to contain it.

Q. But your experinece with Coca-Cola is limited to yourself?

A. Well, I have known other people to use it.

Q. Extensively?

A. Of no, not very many; I have seen it drunk in our drug stores and places where they sell it.

Q. Now, referring again to females, isn't there likewise a critical period or a supersensitive period in the life of a female about 45 when they are extremely nervous?

A. I presume by female you mean a woman of that age?

Q. Yes, I am talking about humanity.

A. Well, there are females and women of that age.

Q. Yes, I undertood that. I am talking about people and I supposed you had been.

A. Well, I only want to be careful about it, that is all.

Q. What did you say?

A. I only wanted to be sure as to what you meant.

Q. Well, have you been talking about animals?

A. No, sir; not so far as I know up to date.

The Court: Well, that is immaterial.

BY MR. MILLER:

Q. I will ask you if in a female there is not a supersensitive period of, from 38 to 45 years?

A. Yes, sir.

Q. And when, in the language of Doctor Hamilton, the mental equilibrium is rendered unstable frequently by outside agencies?

A. Yes, that is an unduly sensitive period with women.

Q. Isn't it a fact that caffeine-containing beverages are often discontinued during such periods at the direction or behest of physicians?

A. Yes, sir; I think they are.

Q. It is also a fact, isn't it, Doctor, that during the period of pregnancy that a woman is very sensitive?

A. No, I think not. That is not so.

Q. Do you know how that is?

A. Yes, I do.

(Witness excused.)

The Court: I would like the transcript with the exact question you asked with reference to caffeine substances.

Mr. Miller: You will find it on page 1574.

The Court: I would like to have Chittenden on Nutrition of Man.

Mr. Sizer: We will have to get that — it was only quoted here.

The Court: All right.

Mr. Miller: He cites Chittenden, Sherman quotes from Chittenden.

The Court: Well, let me have Sherman then.

Mr. Sizer: We have Hutchinson also, if your Honor would like to have it.

The Court: Yes.

Mr. Sizer: I think the places are marked there.

Mr. Miller: Just pass up all of them.

Mr. Sizer: How was that?

Mr. Miller: I say, just pass all of them up to the Judge.

Mr. Sizer: Yes, I shall do that. I see some of them are not marked.

Mr. Miller: There is the coffee history.

Mr. Sizer: Yes, just pass that up.

Mr. Miller: And Hewitt.

Mr. Sizer: Does your Honor want this Bunge again?

The Court: You may add it to the list and let me have it. Page 1575 seems to be left out of this copy.

Mr. Miller: We have not page 1575 here.

The Court: His answer is at the bottom of page 1574 and the last part of it goes over on the next page.

Mr. Hirsch: Our copy came the same way.

Mr. Miller: Well, we will have your Honor supplied with page 1575.

DR. ALLEN McLEAN HAMILTON,

the next witness called on behalf of the claimant and intervenor, the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Please state your full name, Doctor, and your place of residence.

A. Allen McLean Hamilton, 1950 Madison avenue, New York.

Q. What is your profession?

A. Physicion.

Q. Please state when and where you educated in medicine, or took your medical course.

A. I graduated at the College of Physicians & Surgeons, Medical Department, Columbia University, in New York, in 1870.

Q. Have you made a special study in your profession, and state also with what institutions or hospitals you have been connected.

A. I have made a special study of clinical diseases of the mind and the nervous system. I practiced general medicine for several years, and for the past 35 years I have practically devoted most of my attention to those special subjects. I graduated and then entered a hospital in Brooklyn as interne for a year, and I came to New York and entered the out-door department of the New York hospital, the department of head and abdomen, seeing nervous diseases there and general diseases to some extent. I then was physician in charge of the New York State Hospital for diseases of nervous system. I was then attending physician of the Hudson River State Hospital at Poughkeepsie for the insane. I was attending physician for Reynold's Hospital for Idiots and Imbeciles. I was attending physician at the New York Hospital for nervous diseases and the hospital for the epileptic and paralytic—that is a city institution. I have been for the past thirty years attending and consulting physician at the hospital for the insane, Ward's Island, New York.

Q. Have you taught mental diseases in any institution?

A. Yes, sir; I was Professor of Clinical Psychiatry at the University of Medical School of New York. Also upon Medical Therapeutics at the College of Physicians & Surgeons in the year 1899.

Q. Have you written any books?

A. Yes, sir; I have sir. I taught this.

Q. Will you please give a list of them?

A. Yes, sir; I have written a book upon Clinical Psychiatry; upon Clinical Electrical Therepeutics. I have written a treatise upon medical Jurisprudence, and a second one in two volumes, one volume introduced here today, a book upon nervous diseases and a book on the Modern Treatment of Headaches, and a book on Railroad Accidents and Injuries, and their relation to the nervous system, and I have contributed frequently to medical literature in other directions.

Q. And among other things, did you take a prize on an article on some neurological subject?

Mr. Miller: I object to that.

Mr. Sizer: Maybe the Doctor has not retrograted as far as you.

Mr. Miller: I will agree to that, but I submit it is incompetent in this case.

The Witness: I will say that I never took a prize at Sunday School.

Mr. Miller: I submit it is immaterial.

The Court: I think it is competent.

The Witness: I took the first prize of the American

Medical Association for an essay upon the diseases of the lateral columns and the spinal cord in 1879.

BY MR. SIZER:

Q. Now, Doctor, please state just what medical society or societies of any kind you have been a member or connected.

A. I belong to the local societies of the county and the city, and I should say at one time I was Statistical Secretary of the Academy of Medicine of New York. I belong to the American Neurological Association. I organized and was President of the New York Psychiatorical Society.

Q. What does that mean?

A. It means the study of the diseased mind — it is really an interstate society, including the best men in Boston and Philadelphia and other cities. I am also a member of the American Neurological Association, an Association for the study of nervous diseases, and I am a Fellow of the Royal Society of Edinburgh.

Q. Have you made any study of the subject of caffeine-containing beverages.

A. Yes, sir; I have.

Q. And what opportunities have you had, Doctor, for studying that substance?

A. I have had my own experinece. I have had the experience of some of my friends, and I have had the experience derived from the examination and treatment of a large number, many thousand patients, both with private practice and in institutions which I have been connected with.

Q. Please state what your personal experience with the use of caffeine-containing beverages has been.

A. My experience is that caffeine has been taken by me to help me do my work. I have had at different periods in my life — there have been times when I have been rather under pressure, and have been compelled to work in a short space of time. At these times, I have taken coffee and pure caffine for the purpose of having more ability to do the job I had to do. I have found that in my case this has been followed without any depression or any bad consequences whatever. I have been able to do better work and do it in quicker space of time and suffer no evil consequences from it.

Q. Do you use any caffeine-containing beverage ordinarily or regularly?

A. Yes, sir.

Q. How much?

A. I suppose I take — it varies — sometimes I take

none for a time when I do not care for it — I take two cups of coffee in the morning, strong cups, which will contain two grains of caffeine.

Q. Do you mean two grains each?

A. Yes, sir; from one and a half to two grains each. I take very often in the evening, two cups of tea which is fairly strong. I sometimes take an after dinner cup of coffee. I suppose on the average I get four or five grains of caffeine every day, and have for a great many years.

Q. Is caffeine used as a part of diet in institutions for the insane which you have been connected with?

A. In the form of coffee and tea, it is.

Q. To what extent?

A. The asylum at Ward's Island, and in fact, all the state hospitals, they get one cup, some of them, and some two, if they want it, of coffee every morning, and they get two cups of tea every night.

Q. How about the use of caffeine beverages as a part of the ration of the army and navy.

A. Yes, sir; it is used.

Q. To what extent?

A. The United States army receives a ration of 1.12 ounces of coffee per diem — there are several kinds of work in the garrison and in the field, there is no variation in quantity — four or five cups of good strong coffee, and I may say that as a result of my observation, the quantity of coffee is divided. As a usual thing, a man gets his rations, and if he does not use it, he pours it back into this pot, and some, in that way, get more than others?

Q. Is that due to the fact that some of them don't drink it?

A. Yes, sir; and others a great deal more, get a great deal more.

Q. Consequently, their share goes to the others?

A. Yes, sir.

Q. How about the use of caffeine-containing beverages in the Government asylumn for the insane at Washington?

A. The patients in the Government asylumn get an average of three-quarters of an ounce of coffee per day.

Q. What is the effect of caffeine taken in the term of beverage, on the mental processes?

A. The effect of caffeine, particularly pure caffeine where there is no complication — no complications which occur in coffee where there are other substances, is to stimulate the mind, the man's ability to associate his ideas is increased and improved. He is enabled to do more work, — intellectual work which he could not do before without

any signs of effort, that he, he works without appreciating that he is doing hard work. He has no essential stimulation, or comparatively very little. In that respect, the effects of caffeine differ from those of morphine and cocaine, where there is excitement — emotional excitement. These are about the chief ones. So far as his judgment and memory to recall ideas, it is improved, and of course, all his intellectual operations are stimulated and increased by the existence of the effect of the caffeine.

Q. Doctor, is that injurious, those effects you have testified to, are they injurious to the general health of a person?

A. I don't consider them so. I might say that these things are regulated very much by the men; take my own case. I take caffeine to do work at night, and I would sometimes not do quite as much work as I expected to do, and have taken a given amount of caffeine, say five or six grains of caffeine, and the result would be I did not feel like going to sleep, and I would pick up a book and read, and gradually the effect of the caffeine disappeared, and then I would sink into a natural sleep and wake up in the morning refreshed.

Q. How long does it take the effect of a quantity of caffeine which may be taken into the system, to disappear?

A. That depends upon the individual case. Also under what circumstances they take it; it is a variable time, I don't think any reasonable amount of caffeine is retained for more than several hours, perhaps two or three hours, but I would not wish to answer that definitely.

Q. What kind of persons would be affected most by the taking of caffeine-containing beverages and what kind might possibly be injured?

A. What we call neurotic and psychopathic people, defective people.

Q. Those are not normal individuals?

A. No, sir; they are unfit individuals. It may do harm or it might not occur with a good many people who have nervous diseases.

Q. Is there any nerve or mental disease produced by caffeine alone?

A. There is not. There are symptoms produced, sometimes produced by excessive use of caffeine in subjects who are not normal.

Q. Is caffeine ever used as a curative agent?

A. It is.

Mr. Miller: We agree that it is used as a therapeutic agent taken like any other drug.

Mr. Sizer: If you concede that I will pass on.

BY MR. SIZER:

Q. Is it possible that the use of caffeine may sometimes produce insomnia, and if so, under what circumstances?

A. The use of caffeine in coffee may produce insomnia and it does produce it very often from disturbances of the digestion produced by caffeol and the other things in the coffee. Sometimes coffee and sugar will produce a condition of gastric disturbances that produces insomnia when black coffee won't do it.

Q. Does caffeine ever produce sleep?

A. Yes, sir, in this way: It produces sleep in a tired brain in which the breakdown of the nervous tissue remains and is not removed by the introduction of fresh blood. This matter is removed, taken away, and excreted, and of course the toxic conditions being removed, sleep follows.

Q. Have you had occasion to observe the extent and effect of caffeine-containing beverages in other countries besides this?

A. Yes, sir.

Q. Where?

A. I spent some time in Japan and some time in Southern Africa. I was at Tunis, I was at Algiers, I was at Visca and at Morocco. I went to these places on three different visits abroad. I spent several weeks in Japan. In both of these countries — in Northern Africa coffee is used in its strong form. They get the full caffeine content. In Japan they have nothing but tea, and I have been amongst those people and watched them and saw their lives and saw their children and have noticed the effect of coffee and tea.

Q. Do they drink coffee and tea throughout the day, or only at meal times?

A. They drink it at all times. Of course, in Mohammedan countries they are not allowed to drink wine or spirits, and coffee and water are the two beverages.

Q. You say that children drink coffee and tea?

A. Yes, sir; particularly in Japan I saw children constantly drinking tea.

Q. What is the condition of health of those people and of their children?

A. From my observation of the people and the children, both nations are warlike, full of endurance, can stand great physical fatigue, can endure long marches, apparently have no physical diseases, and the children are fat and well nourished, and I saw none of the casual ordinary evidences of nervous diseases found in other places. Of course, I saw the same number of sore eyes and things like that, but I saw no evidence of any effect from drinking tea and coffee.

Q. In your opinion, is there anything in the caffeine or in caffeine-containing beverages that might affect an unborn child or have any effect on the progency of people who take it?

A. I do not believe it can.

Q. Is there sometimes a difference in the effect of coffee and tea on people, and if there is such difference, to what would you ascribe it?

A. There is a difference. Some people can take tea and cannot take coffee, and vice versa. Sometimes it is purely nervousness, and then again it is due to different substances; for instance, tea has tannic acid and that disagrees with a good many people and they cannot take it, and they take coffee.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. You know that caffeine poisoning from strong coffee is very frequent in Turkey, if you have traveled there?

A. I do not know.

Q. You do not know how that is?

A. I don't know anything about it.

Q. What country was it besides Japan where you made your visit, what that Africa?

A. I went to Tunis, Algiers, Visca and Morocco.

Q. Coffee takes its name from a certain province in Africa?

A. In Arabia.

Q. That was where it was first obtained.

A. Yes, sir.

Q. In the work which you wrote, which I have only the second volume of ——

A. May I interrupt — Doctor Hines, will you send for the first volume of my work? It is in my room.

Q. I want to ask you about this. You class hydrochloric acid as a poison?

A. I do not think I make any mention of it as far as I know in that work. I do not wish to qualify as an expert on poisons, but as a common garden doctor I can understand that it can act as a corrosive poison, that it is strong ——

The Court: I do not see the bearing of that, as to whether hydrochloric acid is a poison. Is that the question?

Mr. Miller: Yes.

The Court: I exclude that.

Mr. Miller: My point was that hydrochloric acid would be classed as a poison and if it is not so toxic as caffeine I could prove it by this witness.

The Court: I exclude that.

BY MR. MILLER:

Q. Hydrochloric acid is a normal constituent found normally in the stomach?

The Court: I exclude everything about hydrochloric acid.

Mr. Miller: Note an exception.

BY MR. MILLER:

Q. You wrote the volume of the treatise which was read to Doctor Moyer?

A. I wrote part of it.

Q. You wrote that part which was read to Dr. Moyer?

A. I did.

Q. When you speak of caffeine-containing beverages being taken and consumed, you mean coffee and tea taken at meal time?

A. I mean coffee or tea taken at any time.

Q. The most prevalent time for coffee and tea taking is at meal time?

A. The habitual time, yes.

Q. Referring to the time you would take caffeine and about its stimulating you when you were tired and had increased your work, if you had taken cocaine you would probably have gotten the same result?

A. No, sir.

Q. What would have been the result?

A. I would have had exhaustion after.

Q. I talk about the stimulating effect. Would not you have gotten the same stimulation?

A. No, sir; I would not have gotten the same stimulation.

Q. You would have gotten the form?

A. Yes, sir; the form, but not the same.

Q. If you had taken alcohol you would have gotten stimulation?

A. Not the same.

Q. But you would be stimulated, I didn't say the same.

A. I would be stimulated, yes.

Q. You say you give coffee to insane people?

A. To some insane people.

Q. Do you make any discrimination as to whether you give it to one or not?

A. It is given in the asylum in the routine way as a regular diet. I am perfectly willing to say in my own practice there are some cases I would not use it. I would not use it in any considerable quantity with any excited

cases, but you give it as a remedial agent in melancholia.

Q. When you say excited cases, — explain.

A. I would not give it to any maniacal case.

Q. I do not understand that.

A. Do you know what mania is?

Q. Yes.

A. That is acute mania.

Q. They have various kinds of manias.

A. I am speaking of acute mania.

Q. That means disease of the mind?

A. That means disease of the mind, from some autogenitic poison. A form of bodily poison and I would not give any remedy which would contribute to the xanthine quantities in the body.

Q. By melancholia, when you give coffee it would be as a remedial supporting agent?

A. Yes, sir. They are below par, depressed.

Q. When a man drops below normal?

A. Yes, sir; from disease.

Q. And you would give it to rouse him up?

A. Yes, sir; just as I would give alcohol or stimulating food or many other things to bring him up — keep him up.

Q. You never made any test to ascertain the length of time that caffeine stays in the system?

A. No scientific test. I am not competent to do that.

Q. Is it not true that caffeine might be a contributing agent to nervous disorders?

A. If you will tell me what you mean by nervous disorders.

Q. I could hardly be expected to tell a nerve specialist what I mean by nervous disorders.

A. Without quibbling, I am perfectly willing to say it does produce nervous symptoms in some people. I suppose you mean unrest and irritability and sleeplessness, and it does produce that in some people.

Q. Insomnia or sleeplessness in this depressed state which you describe as melancholia is not conducive to the health of the individual?

A. It depends upon the degree. I have been awake here every night since I have been here in Chattanooga; I do not feel well. When I get on the train tomorrow and when I get home I will feel perfectly well, so it is not a diseased condition.

Q. My question was as to sleeplessness, whether that is conducive to good health.

A. No, sir. Any disturbance long continued is not conducive to good health.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. You say that under certain conditions you would not give caffeine to such a patient. Isn't it also true that under certain conditions you would withhold other articles of food which would be proper with a well man?

A. Yes, sir, a great many.

Q. You started to explain the difference between alcohol and caffeine stimulation and I wish you would do that.

A. The psychic effects of alcohol, I think, are far more injurious than of caffeine. There is nothing more than mild stimulation with caffeine, and with alcohol I think there is more direct toxic — more direct action from the contact of the alcohol. I think a good deal of the cerebral effects of caffeine come from the effect on the heart itself directly.

Q. How about the relative after-effects of alcohol and caffeine?

A. I say the depression with alcohol — that is, the amount of alcohol to produce a change of cerebral effect — is attended by more or less conscious depression. You can take considerable quantity of caffeine without any effect whatever.

(Witness excused.)

DR. STEWART ROBERTS,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Where do you live?

A. In Atlanta.

Q. Are you a practicing physician there?

A. Yes, sir.

Q. Are you connected in any way with the public schools of Atlanta?

A. No, sir. I was formerly medical director of the Atlanta public schools.

Q. For how many years?

A. About a year and a half.

Q. Have you made an examination of a number of subjects in the City of Atlanta who are accustomed to use Coca-Cola?

A. Yes, I have.

Q. How many subjects did you examine?

A. One hundred.

Q. Did any other doctor assist you in the examination?
A. Yes, sir; Doctor Boland.
Q. Who selected the subjects examined?
A. I did.
Q. What was the object in the selection of those subjects as to getting people who used much or little Coca-Cola?
A. The object was to select those people for examination who drank the greatest amount of Coca-Cola daily and for the greatest number of years, and in selecting those subjects it was necessary as we went on — I found it necessary to refuse a great many subjects because they had not drunk Coca-Cola either enough daily or long enough period of time.
Q. You wanted to get a test on those who had been accustomed to the use of it for some time?
A. Yes, sir.
Q. What was the average number of glasses per day among those one hundred?
A. The average number of glasses was three and one-tenth glasses drunk by the one hundred.
Q. Do you remember what the average length of time was they had been drinking?
A. Ten years and seven months each on an average.
Q. I will ask you what kind of an examination you subjected these people to, and if you have any notes or memoranda, you may refer to them.
A. I started out to prepare blanks based on the form of life insurance blanks used by the great insurance companies of this country, the test ordinarily required by the insurance companies.
Mr. Miller: I object to that. That is not competent. He can tell what his test was, but he cannot tell what the insurance companies require. That is secondary evidence.
The Court: Have you one of those blanks?
The Witness: Yes, sir, I have.
The Court: The objection as to secondary evidence is removed and I do not think it is incompetent otherwise, and I will overrule the objection.

BY MR. SIZER:

Q. Just file that insurance blank as an exhibit with your testimony and then proceed with your answer.

(The document was received in evidence and marked Exhibit 1 Roberts.)

A. To sum the whole matter up, the ordinary test made by examining physicians of an ordinary patient and ten

additional tests were added, principally concerning the condition of the nervous system, and in every case the urine was examined, not only chemically but microscopically.

Q. Now state the tests that you say are used by the insurance companies in making their examination of applicants to which you submitted these subjects.

A. Their appearance as to health was noticed, the number of times they breathed per minute was counted. Their weight was taken, not by their say-so, but they were actually weighed on scales, and their height was measured. Their temperature was taken by an ordinary fever thermometer. Their pulse was counted and its condition as to rate and strength and regularity, etc., each separately noted. A special instrument was used known as the blood pressure instrument. This instrument measures accurately the force with which the heart beats and whether the heart beats regularly or not, and the speed or velocity with which the blood goes through the blood vessels. That was taken and also that instrument had the power to write out the pulse beat, a little pen point on a blackened paper, and the pressure was taken and the quality of the pulse noted, and an actual tracing of the blood through the arteries written out on a paper, and that was examined and noted.

The nervous system was examined by the knee jerk. The patient was struck on the knee to see whether the reflexes were normal and responded to the stimulus. The eyes were examined as to whether they were sensitive to light. That is, as to whether the pupil contracted when it looked at a bright light and as to whether it was expended when it was put into a lesser light. The eye was also examined as to whether it expanded when it looked at an object two or three miles away and then as to whether it contracted when they looked at an object two or three inches away.

The general nervous condition was examined by what is known by the Rhomberg Test, as to whether the patient could stand erect with eyes shut and toes and heels together, and whether his walk was steady, and his general nervous condition was taken.

The fact as to whether he had any headaches or not was noted and that was carefully put, not as to whether he was accustomed to have headaches, but as to whether he ever had headaches, and in addition to that Question No. 15 dealt with another nerve defect which might have been overlooked in the previous tests.

Then again any other brain or nervous symptom such as unsteadiness or anything of a general nervous condition was ascertained. The heart and the blood vessels were

carefully examined and the lungs were examined and the condition of the stomach and other abdominal organs was noted, whether the patient ever suffered rheumatism or gout, the condition of the kidneys, and after the urine had been carefully examined both chemically and microscopically, that was noted. In addition to this, it was ascertained whether these subjects had ever applied for life insurance and whether they had ever been refused life insurance. The total number of policies carried and the total amount of insurance carried was also noted. It was also ascertained as to whether they considered themselves in perfect health at that time, and as to whether they had been seriously sick during the last five-year period, and as to what effect they considered Coca-Cola as a drink by them had had on themselves, both as to sleep and as to the nervous system, and as to stimulation, and any other effect which they had noted.

It was also ascertained whether they drank coffee or cocoa or alcohol or tea, or whether they used tobacco or any other stimulants or sedatives previously mentioned.

Of course, the age and sex was also noted, and it was also noted as to whether they seemed to be about the age stated. That is, as to whether they were prematurely old, unsteady or wrinkled or gray — different from what the age stated would justify.

Q. How many of them were females and how many males?

A. Eighty-six males and fourteen females, and I may say of these women, with the exception of two, — that is, twelve of the fourteen women,—were women who for a long period of time had been working six days out of the week, most of them in offices doing rather strenuous work for women, such as stenography and bookkeeping, and auditing work.

Q. With respect to the vocation of the male subjects.

A. The effort was made to select these one hundred people from as many different occupations as possible; that is, we did not look for all clerks or mechanics or insurance people or farmers, or all druggists or all salesmen, but the effort was to get as many different occupations represented in the one hundred as possible, and in adding up the number I found that thirty-four different lines of work were represented.

Q. What were the limits of age — what was the youngest?

A. The youngest subject was nineteen, according to my best recollection, and the oldest subject was fifty-three.

Q. That covers the examination?

A. Yes, sir.

Q. State what was the result of this examination and what you found to be the condition of the health of these one hundred persons.

A. You do not want each different one?

Q. No; just the summary.

A. As far as I could tell from this work, there was no defect that I could find present as the result of Coca-Cola on these people.

Q. What was the general condition of their nervous health? Did you find any of them abnormally nervous or disturbed in that particular?

A. No, sir; I did not. Of course, I found some who had occasional headaches, but the cause of the headaches was ascertained and in not any case was it due to Coca-Cola.

Q. You say you inquired as to whether they had life insurance; what did you ascertain with respect to that?

A. Out of the one hundred I examined, sixty-eight of them carried insurance. These sixty-eight that carried insurance, two had been held up temporarily; that is, at the time they applied for the policy it was not granted that day, but it was held up for a short time until the physical condition could be more thoroughly investigated by the company. One was held up on account of a certain disease his family had had, and one on account of his heart, but both were later granted insurance so that of the sixty-eight who applied for insurance sixty-eight were granted insurance.

Mr. Miller: As to this, I move to exclude because they were statements made not by patients to a physician for treatment; such statements to be competent must be made by a patient to a physician of the patient's history.

Mr. Sizer: I am not offering this on the theory that any statement made to a physician is competent, but we took the depositions of half a dozen of these people in Atlanta and then we stipulated with counsel on behalf of the Government that the testimony of those witnesses taken would be typical of the whole one hundred.

Mr. Miller: That is true, but this doctor is undertaking to tell what the people told him, and I say in so far as he bases any statement of his on what they told him as to whether they had been refused life insurance or granted life insurance, the evidence is not competent.

The Court: I think in so far as the witness makes any specific statement of what they said to him, the objection is well taken, but in so far as he merely tabulates the result of the experiments of this sort, including the information

derived from persons examined, the evidence is not incompetent. I do think that the testimony as to how many carried life insurance should be excluded on the ground that it is too remote and is irrelevant as being influenced by a great many other causes, because companies may be lax in one city about taking people and more strict in another. I exclude that, but the rest I do not except as specific statements of some person to this witness of which I do not now recall any.

Mr. Miller: He stated that he asked them if Coca-Cola affected them.

The Court: He has not stated what they said. He made the statement that he did ask them whether Coca-Cola affected them, but he did not say what they said. Now, I think there must come a point in an examination when a physician investigates a large number of people that he should be allowed to tabulate the results; otherwise, it would be impossible to get it, and then the question is for the jury as to the accuracy with which the experiment was carried on and whether it was given under circumstances that they probably gave correct information. That is a question as to the weight. If there one case and one answer about one person, I think the objection would be well taken, but I think there comes a time in such experiments when a person must be allowed to tabulate the statements of others.

Mr. Miller: Well, now, certain statements are admitted and certain statements excluded.

The Court: I do not recall of any statement made by the witness except the one affecting life insurance companies, and that whole life insurance matter is excluded.

BY MR. SIZER:

Q. I believe you are a practicing physician in Atlanta?
A. Yes, sir.
Q. For how many years?
A. About eight and a half years.
Q. Is it or not true that Coca-Cola as a beverage is very extensively sold in Atlanta?
A. Yes, sir; very extensively.
Q. That is where it is manufactured?
A. Yes, sir.
Q. In the course of your practice and among your acquaintances, have you been thrown in contact with people who had used Coca-Cola extensively?
A. Yes, sir. Most people I am thrown with drink Coca-Cola.
Q. Have you ever known of any class of disease or dis-

ders, physical or mental, due to the use of Coca-Cola?
A. No, sir; I have not.
Q. What is the effect with respect to drinking Coca-
ola by children, do they like it?
A. If you will let me qualify that statement — out of
l the research and examination I made, I should say that
ne woman said she thought it made her nervous, but
rther than that absolutely none.
Mr. Sizer: As your Honor has excluded anything that
ne person told us and as I didn't ask for that ——
The Court: You asked a pretty broad question.
Mr. Sizer: Well, I will let it stand.

BY MR. SIZER:

Q. What was the condition of her health from the test
u made?
A. Her condition was perfect.
Q. Now, about the use of Coca-Cola by children; do
ey like it or do they take it generally?
A. No, sir; they do not.
Q. Do you know why that is?
A. Yes. For a period of time I was thrown very inti-
ately with children in the City of Atlanta and with the
achers of those children. As a matter of fact, I examined
007 of these children and I have been thrown with them
th to and from school, and I have for the last several
onths watched very carefully the habits of children in
tlanta as to the drinks which they order at the soda foun-
ins in Atlanta, and I have never seen a child order Coca-
ola in Atlanta at a soda fountain.
Q. What do you mean by "child"?
A. A child under fifteen years.
Q. To what do you attribute the fact that children do
t take Coca-Cola?
A. That they like other things, that they like their
inks both sweet and cold, and they like ice cream, choco-
te ice cream, and more especially chocolate ice cream soda.
Q. Is there a peculiar flavor about Coca-Cola not found
any other soda water beverage?
A. Yes, sir.
Q. How many school children did you say you exam-
ed?
A. 7,907.
Q. Did you find any cases of nervousness?
A. Twenty-six out of the 7,907 qualified as nervous.
Q. What was the degree of nervousness of those 26?
A. A child would appear rather haggard and weak men-
lly, and could not sit still or be still, and of those cases
unted as nervous, two of them had the disease known as

St. Vitus' Dance, and could not sit still, and the rest were nervous from enormous adenoids or enlargements in the nose, or from lack of food.

Q. Were any of those 26 children suffering from any troubles that could in any way be attributed to the use of caffeine-containing beverages?

A. No, sir; they were not.

Q. From your experience, are you prepared to testify whether or not Coca-Cola is a habit-forming beverage?

A. Yes, sir.

Q. What do you say about it?

A. I say it is not.

Q. Do you use it personally?

A. Yes, sir.

Q. To what extent?

A. I may take one glass a day, never more than once a year more than two a day, and I may go a few days without taking any, and I do not take it at any regular time.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What is your relation to the manufacturers and producers of Coca-Cola?

A. What do you mean?

Q. I mean, what is your relation?

A. We both live in the same town and the same State.

Q. Do you hold any professional connection or sustain any professional relation to them?

A. Whom do you mean by "them"?

Q. Judge Candler, or Mr. Asa G. Candler, or their families, in general.

A. No, sir, I do not. I think one time Judge Candler's daughter had her finger hurt and I put a bandage around it.

Q. And that is the extent of your relations or your professional connection with any of the persons who are engaged in the manufacture of Coca-Cola in Atlanta?

A. Yes, sir.

Q. I show you a little book issued by the Coca-Cola people, and I will ask you to state whether or not on page three of that pamphlet there appears an open letter from you certifying to the virtues of Coca-Cola, and whether you are the same Doctor Roberts who wrote that letter and addressed it to Judge John S. Candler.

A. Yes, sir; I am.

Mr. Miller: I offer that pamphlet in evidence.

The Court: For what purpose?

Mr. Miller: To show his interest in this case because I

think it is apparent from the reading of that letter. I have not finished the cross-examination, but I wish to offer it now.

The Court: Without objection it may be offered.

BY MR. MILLER:

Q. This letter was dated September 9, 1907.

A. September 7, was it not?

Q. It is printed "September 9." What were the circumstances under which this letter was written?

A. If I remember correctly, in 1907, or at that date, I was Professor of Physiology in the Atlanta School of Medicine, and Judge Candler wrote me and asked me as a professor of physiology to state the physiological effects that the beverage Coca-Cola, and the beverage coffee and the beverage tea would have on human beings, and signed it: "Very truly yours, John S. Candler."

Q. Did you receive any compensation for writing that letter?

A. I did, just as you do.

Q. I don't know whether it is as I do or not.

Mr. Sizer: I submit that is not a proper question.

The Court: I will overrule the exception.

BY MR. MILLER:

Q. In this letter it is stated that caffeine in medical doses which range from two to three grains, or in minute doses, as for instance Coca-Cola, has no effect whatever on the digestive system or the alimentary canal. Do you make that statement now?

A. Yes, sir.

Q. It further says: "The influence is a temporary one and does not noticeably increase the power to do work except when the body is plentifully supplied with nutritious food." Now, I infer from that that when the body is plentifully supplied with nutritious food that the taking of caffeine is not conducive to good health or to increase work. Is that what you mean by that statement?

A. No, sir; your inference is wrong.

Q. What did you mean by the statement that the influence is a temporary one and does not noticeably increase the power to do work except when the body is plentifully supplied with nutritious food?

A. Just what it says.

Q. Suppose you take it on an empty stomach, what would be the result?

A. In what amount?

Q. The amount you are talking about here in this connection.

A. I speak of several different amounts here.

Q. You state that caffeine is a cerebro-spinal stimulant, physiologically, in the human mechanism, and it may temporarily increase the ability to do work, chiefly on account of its action on the central nervous system. This influence is a temporary one and does not noticeably increase the power to do one's work except when the body is plentifully supplied with nutritious food. That is a summation of what you said. Now, what quantities were you talking about?

A. That letter was written four years ago and so far as I remember I was speaking of caffeine in amounts ranging from three to four grains. I suppose what you are driving at is this: I would like to understand that question as to whether in a man who does not get any food, caffeine would make him do more work.

Q. I have just asked you the effect of taking it on an empty stomach.

A. I think it would have the same effect exactly, as it would have when taken on a full stomach, whatever that effect would be.

Q. You say it would cause the body to do more work than it would otherwise do. Then you think the taking of that on an empty stomach would cause the body to do more work than it otherwise would do, is that what you mean?

A. I just can't understand that long question.

Q. I ask you the question whether or not the effect of taking caffeine on an empty stomach would cause a man to do more work than he otherwise would do.

A. How long was the stomach empty?

Q. It does not make any difference how long it was empty. In other words, does this serve as a food or a stimulant in place of normal food?

A. What do you mean by food or stimulant?

Q. I mean the food.

A. You mean the caffeine itself?

Q. Yes.

A. I would not classify caffeine itself as a food. I would classify the caffeine-containing beverages as food, such as tea, coffee and Coca-Cola.

Q. What are the nutriment foods in caffeine, — what would be the nutrient food in caffeine?

Mr. Sizer: We have not examined on that.

The Court: No, and he could not cross-examine on that, but he is examining the witness in chief as original examination.

Mr. Miller: If I can't cross-examine I won't ask. I thought he had stated about that.

BY MR. MILLER:

Q. Returning for a moment to your examination of these one hundred people, did you select them or were they selected and sent to you? In other words, how did you get their names?

A. Most of them, so far as I remember, I first asked them as to the amount of Coca-Cola which they drank on an average, daily, and how long they had been drinking it.

The Court: That was not the question. The question was how you got the names.

A. Some of them I knew and knew they drank it, and I went to them personally; and others of them were sent to my office.

BY MR. MILLER:

Q. By whom?

A. Mr. Hirsch.

Q. Of counsel for the Coca-Cola Company?

A. Yes, sir.

Q. Then those you did know that drank Coca-Cola and that you asked about it, you asked at the instance of Mr. Hirsch and as a part of your work in this investigation?

A. Yes, sir.

The Court: When was this investigation made?

The Witness: Beginning in May, 1910, and continuing from that time until about the first of this month.

BY MR. MILLER:

Q. Now, in drawing your conclusions as to the effect of Coca-Cola, of course you took the statement that each and all of these people made to you as to the amount of food they consumed, the amount of coffee they consumed, the amount of tea they consumed and the amount of tobacco they consumed, and the amount of other intoxicants they took — you took their statement as being true?

A. Yes, sir.

Q. And you base your opinion on what they told you as to whether or not they partook of these substances and the quantity that they took?

A. I base my conclusions on the results of the examination or examinations.

Q. And you were, of course, employed by the Coca-Cola Company to do that work?

A. I was engaged by Mr. Hirsch, of counsel for the Coca-Cola Company.

Q. Do you know whether or not these subjects that were

sent up there for you to examine were paid to come up?

A. Whatever payments were made I made myself.

Q. Then you ought to know.

A. About eight of the hundred were paid, seven women and one man. The rest were glad to be examined.

Q. Your statement that no nervous disorders were in your opinion produced by caffeine was based entirely on what these people told you?

A. No, sir, it was not.

Q. It was based in part on what they told you?

A. Yes.

Q. Because you asked them ——

A. Yes, sir.

Q. Now, how much was the greatest amount that these people who came up to be examined by you drank of Coca-Cola?

Mr. Sizer: I have no objection to this statement going in if Mr. Miller wants to ask what statements they made, and if he does that we are entitled to have all the statements that they made.

The Court: What was the question?

Mr. Miller: Read the question, Mr. Hacker.

(The question last above was read.)

The Court: The exception is over-ruled.

The Witness: The maximum dose, or the maximum number of drinks of Coca-Cola taken on an average daily by any one of these 100 people examined was twenty glasses daily.

BY MR. MILLER:

Q. That was the maximum average?

A. No, sir, the average glasses daily for a period of 13 months. That was a man.

Q. You found that these children, these 9,000 and some odd children that were examined in school, twenty-six were afflicted with any sort of nervous disease as far as I understand.

A. Mr. Miller, two of these only were actually afflicted with what might be called nervous disorders or nervous diseases. The rest of them were simply slightly nervous and looked as though their nervous systems were not quite up to the standard for that child of that age as the result of some other contributing cause as adenoids or tonsilitis or auremia.

Q. Have you ever studied vital statistics at all?

A. No ——

Q. Have you not studied enough to know that the statements you make on that stand are discredited by every writer on vital statistics, that 26 out of 7,000 odd children

are only affected by nervous disorders?

A. That depends upon the point of view. If you take the statistics of the German children. The German physicians seem to count as nervous disorders things that American physicians do not count as nervous disorders.

Q. Confine it to New York, Chicago, or Chattanooga, or any place?

A. I have studied the conditions with reference to children in Baltimore, Philadelphia, New York and Boston. I mean I have actually been on the ground and seen the work done and the conditions under which those children live in those cities, and a great many of them are of foreign parentage and do not receive their amount of fresh air or food or the open air conditions that children receive, Southern children receive, and that was one of the main questions, and one of the main conclusions as the result of this work done with the Atlanta children; that they were less nervous children of any children I had ever known anything about.

Q. Then, if I understand your statement it is that this percentage of nervousness in children which you have given as a result of your examination discredits or rather it is lower than that of any other report made with respect to that form of trouble in children?

A. It is lower I think, yes, sir.

Q. Now, when you stated that certain of those just appeared by looking at them, what kind of examination did you give these children, anything but merely looking over or at them to see whether or not they appeared to be nervous?

A. Do you want me to state in detail the examinations that they were subjected to?

Q. I asked as to whether they looked to be nervous?

A. They were all subjected to the same examination —

Q. Well, were they all subjected to the same examination?

A. I cannot give an answer to that question without giving the whole examination.

Q. Then give in detail as to what you did as to these seven thousand children.

A. Each sex of the children was taken, the weight taken in a great many of them if they looked under weight; their eyes were tested as to distance by the ordinary Smellings eye chart; their ears were examined; the eyes were examined as to conditions of the lower lid and the surface of the eye; the nose was examined; their teeth, tongue and throat, the condition of the tonsils, as to whether they had adenoids or not; the heart examined and listened to carefully,

the lungs were examined; the condition of the bones, noting appearance of the child as to health, whether its state of nutrition was good, as to whether or not it had plenty of food; as to whether it seemed for its age and sex a healthy normal child. It would take to do this examination sometimes fifteen or twenty minutes.

Q. Are you an oculist?

A. I am not.

Q. Are you a specialist in diseases of the eye, nose or throat?

A. No, I am not.

Q. When was it that you went through these examinations and made these examinations?

A. I believe this was done from about March, 1909, to 1st of June, 1910.

Q. What business have you been engaged in since the 1st of 1909? I mean aside from this examination?

A. I have been practicing medicine both before and during and since that time, and have been teaching medicine.

Q. These examinations were conducted where?

A. These examinations were conducted in the different public schools in the City of Atlanta.

Q. The tests that you refer to as having been made in your examination in chief were for the purpose of ascertaining as to the presence or absence of symptoms of locomotor ataxia, were they not?

A. No, they were not; not solely for that purpose.

Q. Not solely for that?

A. No, sir.

Q. Now, do I understand that you never saw a child under 15 years of age buy a glass of Coca-Cola?

A. Yes, sir, that is right.

Q. Well, you do know that it is on sale or for sale at five cents a glass in Atlanta and Chattanooga and other Southern cities to anybody who wants it?

A. Yes, so far as I know.

Q. Now, doctor, taking as a basis your statement that it took about twenty minutes to make one of these examinations, that would be three an hour, and if you devoted your entire time, if you worked full ten hours a day without stopping to eat, drink, or anything else, General Cox informs me that the statements show it would require full 233 days for you to have made these examinations if you had worked constantly?

A. You did not quite get my statement accurately, Mr. Miller, and therefore your calculation is wrong. I said some of these children it took as long as 15 or 20 minutes

to examine, and there is a great deal of difference between some and all.

Q. I thought you said you examined each for twenty minutes?

A. I did not, they averaged anywhere from I should say two minutes up to twenty.

Q. From two minutes to twenty?

A. Yes, sir.

RE-EXAMINATION,
BY MR. SIZER:

Q. I want to ask you about that subject who you say took twenty glasses a day?

A. Yes, sir.

Q. Who was he?

A. He was a man of about 38 years of age.

Q. What was his age?

A. He was a traveling salesman.

Q. Do you remember how you found him or how he was brought to you?

A. I don't know by whom he was found; he was sent to my office because he drank the most unheard of amount of Coca-Cola.

Q. Did he correctly state the examinations that were made and the results arrived at?

A. He did.

Q. Now, doctor, in your practice in Atlanta are you thrown in contact with people who are accustomed to using Coca-Cola?

A. I am.

Q. Both your patients and your clients?

A. Yes, sir.

Q. Now, have you ever found or known of a case of injury to health of any kind resulting from the use of Coca-Cola?

A. I have not.

Q. What is your experience, doctor, with respect to the use of Coca-Cola by children, whether they like it or habitually drink it?

A. So far as I can recall I have only seen one child take a glass of Coca-Cola, and that was only once that I saw that.

Q. As a rule do children prefer other beverages to Coca-Cola?

A. I am under that impression.

Q. From your knowledge and experience with Coca-Cola — in the first place do you personally use Coca-Cola?

A. Yes.

Q. Do you partake of other caffeine-containing beverages?

A. I drink coffee, and sometimes cocoa or chocolate.

Q. From your experience is the use of Coca-Cola and other caffeine-containing drinks, are they or not habit-forming substances?

A. They are not.

CROSS EXAMINATION,
BY MR. MILLER:

Q. What is your age, doctor?

A. I am 29 years old, sir.

Q. Now, I pass you a periodical published in book form being a case of Coca-Cola poisoning reported in Virginia Medical Semi-Monthly, under date July 13th, 1902, and ask you if you have ever known or heard of that case before?

A. No, sir, I have not.

Q. Or read it?

A. No, I have not; I have never heard of it.

Q. Now, read that case and from the symptoms therein given by the attending physician, state whether or not in your opinion that was a case of Coca-Cola poisoning?

Mr. Sizer: We have not examined him as an expert, but have asked him as to his personal knowledge; he is not qualified as an expert.

The Court: The exception is well taken.

Mr. Miller: We respectfully enter an exception and you may withdraw the book — I insist when he stated what he knew that embraced of course what he had read.

BY MR. MILLER:

Q. Then, doctor, you need not read the case further.

A. All right.

Q. When you were answering on direct examination as to what you knew you mean what had come under your personal observation?

A. Yes, sir.

Q. Did you make an especial careful examination of that man?

A. Yes, sir, that man was examined three times.

Q. What was his condition of health?

A. He was in so far as I could determine perfect condition of human health.

(Witness excused).

J. E. PAULLIN,

the next witness called by the Claimant, of lawful age, first duly sworn, testified:

DIRECT EXAMINATION,

BY MR. SIZER:

Q. Where do you live?

A. I live in Atlanta, Ga.

Q. Are you a practicing physician?

A. I am.

Q. Of how many years experience?

A. I received my medical degree in 1905; I have been practicing in hospitals and in private practice since then.

Q. Have you any official commission in the State of Georgia?

A. I am Pathologist of the State Board of Health.

Q. Did you assist Dr. Roberts in making examinations of these one hundred subjects in respect to the use of Coca-Cola?

A. I did.

Q. And you have heard Dr. Roberts testify about the matter?

A. I have, yes, sir.

Q. Now, you say a great many things transpire daily with you — you make no notes of any of them, you would not recall, it is merely casual observation?

A. Certainly.

Q. You do not recall having noticed but one child?

A. That is all.

Q. You have heard a great many people call for Coca-Cola that you could not call the names of?

A. Yes.

Q. Hundreds of them?

A. Certainly.

(Witness excused).

The Court: Before you put the next witness on I will say I have examined this list of books and references submitted by Dr. Vaughan, on his examination, and I have examined all the original books that have been handed to me, and I find that the original cross-examination of this witness was limited to this question: "Are you acquainted with any reputable treatises that advocate the use of caffeine, or general consumption of caffeine"? That is the way it is written by the stenographer, and immediately preceding in the question is a reference to caffeine as a drug. There was nothing in the question of Mr. Miller as to question of caffeine containing beverages, and it was distinctly limited to medical treatises that recommended caffeine. On re-examination the question was somewhat broadened, including caffeine containing beverages, authorities that recommended caffeine containing beverages,

but no ruling was made on the question, and now a ruling is requested, and while I might be disposed to view the word "caffeine" as there used as covering a case of medical authority or medical treatise recommending any caffeine containing beverage where it appeared that it was recommended because of the caffeine, that case does not arise in any of these references submitted in my opinion. There are only two of these books which can be said in any correct sense, I think as medical treatises — Hutcheson on Foods and probably Bunge on Physiological Chemistry, which might be stretched so as to be called "medical treatises". Neither of these recommends the use of caffeine containing beverages — they discuss caffeine containing beverages — state the action, but I find no reference to recommendation of caffeine containing beverages or caffeine — and I sustain the objection to this list.

Mr. Sizer: I think, your Honor, we will note an exception.

The Court: It may be noted.

E. BATES BLOCK,

the next witness called by the claimant, of lawful age, first duly sworn, testified:

DIRECT EXAMINATION,

BY MR. SIZER:

Q. What is your profession and where do you reside?

A. Physician, Atlanta, Ga.

Q. How long have you practiced as a physician?

A. I graduated in 1895.

Q. Have you had experience, doctor, through your practice and acquaintance with people who regularly drink Coca-Cola?

A. I could not state as to the regularity of their drinking it, but I think I can say, though, yes.

Q. Do you know people who drink it?

A. I do.

Q. Have you such people among your patients?

A. I do.

Q. Have you ever known, Doctor, of a case of physical or mental disorder resulting from the use of Coca-Cola by any person?

A. No.

Q. What is your experience with respect to the custom of children as to drinking Coca-Cola. Whether they like it or ordinarily drink it?

A. I have never seen a child drink Coca-Cola.

Q. Have you seen children drink soda fountain beverages?

A. Very often.

Q. Is it true, then, that they generally drink something else but Coca-Cola?

A. They seem to want the biggest glass they can get for a nickel, and the sweetest.

Q. The biggest glass for the money?

A. Yes, sir.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What do you say your age is, Doctor?

A. Thirty-seven.

Q. Of what institution were you a graduate?

A. The University of Virginia.

Q. Sir?

A. The University of Virginia.

Q. And what is your specialty?

A. Nervous and mental diseases.

Q. You know it to be a fact that persons who are nervous and sensitive, as you might term it, are not proper persons to administer caffeine to under ordinary circumstances, don't you?

A. As a rule I would not give caffeine to nervous people.

Q. You also know that a large proportion of the human race are more or less nervous, don't you?

A. I don't know that, sir.

Q. Sir?

A. I don't know.

Q. You mean — You say you don't know?

A. No, sir. I don't know what you mean by large proportion.

Q. Are there a great many people?

A. There are a great many people, yes.

Q. And otherwise you would not prosper in the practice of your profession if there were not a great many ——

A. Well ——

Q. (Continuing.) — that were afflicted with some sort of nervous trouble?

A. No, sir.

Mr. Sizer: Well, I object to that.

The Court: The objection is sustained.

BY MR. MILLER:

Q. Is it a fact that a goodly proportion of people are afflicted with nervous trouble?

A. You mean over fifty per cent.?

Q. I said a goodly proportion, I didn't mean to limit

to one-half or one-third, but I said a goodly proportion of humanity.

A. If I understand what a "goodly proportion" means I would say no.

Q. Can you tell or have you any method of ascertaining approximately the proportion of humanity that is afflicted with nervous derangements?

A. I can form a pretty fair estimate, yes.

Q. Now, tell us what percentage.

A. Taking the entire diseases that we have, the different countries and the different portions of the world ——

Q. (Interrupting.) I am speaking of this country, the United States.

A. Well, all right, then. The different portions of the United States are afflicted with mental diseases in the proportion of 1 to 350 to from 1 to 500.

Q. Now, that is mental diseases?

A. Yes, sir.

Q. Well, now as to nervous diseases?

A. Nervous diseases on the whole are more common than pronounced mental diseases, and possibly 1 out of 200 would be the record as to nervous diseases.

Q. Can you point to any standard publication or statistical publication with reference to that?

A. I cannot as to nervous diseases. I can as to mental diseases.

Q. What is the proportion relatively of persons who have a tendency to nervousness?

A. I do not know.

Q. That is very much greater than those you have what you say have nervous diseases?

A. I suppose it would be true of any disease, yes, I think so.

Q. And the administration of caffeine to a person with a tendency to nervousness would be, as I understand you, to induce or intensify the nervous temperament?

A. I think as a general proposition that is true.

Q. Now, did I understand you to say or not — you do attend persons who are afflicted with troubles due to Coca-Cola?

A. Never treated anybody for that trouble.

Q. I am asking you whether or not you have treated patients who were afflicted and their affliction was in part due to Coca-Cola drinking?

A. Never to my knowledge.

Q. Well, now then, did you ask to ascertain or did you inquire?

A. I have asked them in regard to tea and coffee, but I

cannot recall positively whether I ever asked them specifically in regard to Coca-Cola, but I have had sometimes had volunteered the information that they drink tea and coffee and Coca-Cola, and asked me if they were injurious.

Q. Now, in the treating of your patients, is it not true that in many cases you must and do forbid them or restrict them as to caffeine-containing beverages, as to the consumption of caffeine-containing beverages?

A. What do you mean by "many," Mr. Miller?

Q. I mean a good many, — several.

A. You mean I have done that several times — yes, sir, I have done that several times.

Q. Why did you ask your patients whether or not they had been consumers of caffeine, Doctor?

A. I said coffee, because in some people who are afflicted with restlessness or some motor agitation, sleeplessness — I find this may be due to the caffeine-containing beverages and I asked them to know.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. And do you or not have occasion to restrict your patients to the use of caffeine beverages — I believe you say you do. Do you mean the caffeine-containing beverages in general, or any one in particular?

A. No; none in particular.

Q. Is it also true that you have to restrict your patients with reference to other liquids or substances?

A. Yes, sir.

(Witness excused.)

Thereupon,

DR. STEWART ROBERTS,

recalled as a witness herein, testified as follows:

RE-CROSS-EXAMINATION,
BY MR. MILLER:

Q. What is your age?

A. Thirty-two.

(Witness excused.)

Thereupon,

T. V. HUBBARD,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Doctor Hubbard, what is your professior?

A. Practicing medicine.
Q. Where do you live?
A. Atlanta.
Q. How long have you practiced medicine?
A. Since 1902.
Q. Do you know the drink Coca-Cola, Doctor?
A. Yes, sir.
Q. Do you know it personally?
A. Yes, sir.
Q. To what extent?
A. Some days I drink maybe four or five glasses, then I will go a week without drinking any, or a month as far as that is concerned, and some days I drink two or three.
Q. Among your clients, or patients, — are you accustomed to meet people who drink Coca-Cola?
A. Yes, sir; I see them take it at the soda fountains.
Q. Have you ever known of a case of physical or mental disorder or derangement resulting from the use of Coca-Cola or any other caffeine-containing beverages?
A. I have never found any.
Q. What do you say, Doctor, with respect to children taking Coca-Cola?
A. I never saw a child take it.
Q. Have you ever seen children drinking other beverages at fountains?
A. Yes, sir; soda water, and taking ice cream and soda chocolate.
Q. From your personal knowledge of Coca-Cola with respect to its use by yourself and other persons, is Coca-Cola, or other caffeine-containing beverages, — habit-forming?
A. That has not been my experience or observations.
Q. Do you know the young lady who is the telephone operator at the Piedmont Hotel in Atlanta?
A. Yes, sir; I know two or three different ones there. They have several.
Q. You say there are a number of them?
A. Yes, sir; I think they have three or four there.
Q. Are you the house physician of that hotel?
A. Yes, sir.
Q. Well, what about the condition of health of those telephone operators there with regard to taking substances containing caffeine?
A. I see they drink Coca-Cola occasionally; I do not know how many glasses they take a day, I see them taking it daily, I see that they do it; they have them sent in.
Q. Have you seen them sent in there?
A. Yes, sir.

Q. Are you ever called to wait on them on account of any nervous disorders?

A. No, sir. Sometimes they have derangements like other people have, biliousness and something of that kind, nothing specially, though.

Q. Do any of them suffer from any disorder that you could trace to the taking of Coca-Cola or any other caffeine-containing drink?

A. No, sir; I could not trace it to that, I could trace it more to the work that they have to do than to Coca-Cola.

CROSS-EXAMINATION,

BY MR. MILLER:

Q. Are you qualified to the extent of stating what is the physiological effect of caffeine on the human system?

A. Well, I know so far as my own observation and reading goes—I am not an expert on the physiological effect of caffeine, and am not a physiologist, I am just a common, ordinary, general practitioner of medicine.

Q. Do you qualify as to the pharmacological action of caffeine on the human system?

A. No, sir.

Q. Are you acquainted with or have you ever read the work of Doctor Hare, entitled: "Practical Therapeutics"?

A. I have read that; I do not remember everything that Doctor Hare says, probably he will tell you.

Q. Are you acquainted with Doctor Hare?

A. I know Doctor Hare.

Mr. Sizer: So far as this witness is concerned, he is not an expert ——

Mr. Miller: I do not care to examine him as an expert. They asked him as to the effect of caffeine.

Mr. Sizer: I did not.

The Court: I understood the question to be very carefully limited to his observations and personal experience. He was not asked any question as a general expert.

Mr. Miller: If he does not undertake to testify as to the effects of caffeine ——

The Court: Only in matters that came within his own personal experience.

BY MR. MILLER:

Q. Because you are the house physician at the Piedmont Hotel, that does not, of course, require you to wait on everybody that is in the hotel; people who come there have the privilege of getting whom they please?

A. Yes, sir, and can get a better physician.

Q. And they can get a better physician?
A. Yes, sir.
(Witness excused.)

Mr. Sizer: We have the depositions which were taken in Atlanta of a certain number of witnesses among the hundred subjects examined there and desire to offer them in evidence.

Mr. Chandler: I will now read the following depositions:

B. B. WEISBERG,

the first witness called on behalf of the claimant and intervenor, the Coca-Cola Company, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH.

Q. What is your name?
A. My full name, you mean?
Q. Yes, what is your name?
A. B. B. Weisberg.
Q. What is your occupation, Mr. Weisberg?
A. Manufacturer.
Q. What is your age?
A. I am now thirty years old.
The Court: I exclude all that as to insurance.
(The following evidence is that part excluded by the Court:)
Q. How many life insurance companies are you insured in?
A. Three.
Q. How many policies have you, Mr. Weisberg.
A. I have nine.
Q. Could you give me the date of the insurance of the first and last policies?
A. Let me see — ten years ago, the date of the first policy, that is about it, then the last one about a year — that would make the first one about eleven years ago, or maybe twelve years.
Q. And when was the last one taken out?
A. Within the past year.
Q. What is the full amount of your insurance?
A. Fifteen thousand dollars.
Q. Have you ever been refused any insurance?
A. No, never.
Q. Do you go to the soda fountains or frequent soda fountains or take drinks at soda fountains?
A. Yes, sir.

Q. And what drinks do you take?
A. Coca-Cola, usually.
Q. How long have you used Coca-Cola?
A. I guess I have been using Coca-Cola, possibly for the last fourteen or fifteen years.
Q. Could you give me about the dates that you started using it?
A. About in 1896.
Q. What, if any amount, or I will ask you what has been about the average amount that you have taken during that time, I mean of Coca-Cola?
A. I guess now for the last couple of years I have averaged three a day.
Q. Are you using it at the present time?
A. Yes.
Q. And at the rate of about how many a day?
A. Three.
Q. Do you use coffee now?
A. Yes, sir.
Q. About how much coffee on an average?
A. About three a day.
Q. You use tea?
A. Never.
Q. Do you use cocoa?
A. Never.
Q. Do you use tobacco?
A. Yes.
Q. Well, in what form?
A. Cigars and cigarettes.
Q. You use alcohol?
A. No.
Q. Do you use any other stimulant or sedatives?
A. No.
Q. As far as you know, how does coca cola affect you?
A. Well, there is no effect. I like the taste of it, that is all.
Q. Are you in perfect health, so far as you know?
A. Yes, sir.
Q. Have you had any serious illness in the last five years?
A. No, sir.
Q. I now hand you a paper, and I will ask you if this is your signature?
A. Yes, sir.
Q. Well now, Mr. Weisberg, where was that paper signed?
A. That paper was signed, let me see, at Mr. Boland's office.

Q. Is he a doctor?
A. Yes, sir.
Q. Do you know who else was present when that was signed, was there any other doctor present.
A. Doctor Stewart Roberts was present.
Q. Mr. Weisberg, are the statements made in that blank form true?
A. Yes, sir.
Q. And is that your signature to it?
A. Yes, sir.
Q. Mr. Weisberg, you stated you had used coffee on an average of three cups a day?
A. Yes, sir.
Q. Do you ever increase the amount of coffee that you do use?
A. I do not know that I have ever done so.
Q. Have you ever had any desire to increase the amount of coffee that you do use?
A. No, sir.

NO CROSS EXAMINATION.

Mr. Hirsch: I now offer in evidence this blank, and will ask the stenographer to attach it to the deposition of this witness.
Mr. Miller: I object to the introduction of the blank.
The Court: The objection is sustained and the blank is excluded.
Subscribed and sworn to before
HARRISON JONES,
Notary Public,
Atlanta, Georgia, March 9, 1911.

R. T. MORRISON,
the next witness, of lawful age, called on behalf of the complainant, the Coca-Cola Company, first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. My full name is Hal Terrell Morrison.
Q. And what is your occupation, Mr. Morrison?
A. I am an electrician or solicitor.
Q. With what company?
A. The Georgia Railway & Electric Company.
Q. And what is your age?
A. I am twenty-six years old.
Q. Do you carry any life insurance, any insurance in

any life insurance company?

The Court: I exclude all evidence as to insurance.

(The evidence excluded by the court is as follows:

A. Yes, sir.

Q. How many policies do you carry?

A. Only one.

Q. Do you know the date of the issuance of the policy? can you give us the date of the issuance of this policy?

A. Well, I said one — one was February 24, 1908, I think.

Q. And what is the total amount?

A. Well, that one is two thousand dollars; and I have another one of a thousand dollars.

Q. You say the first one is two thousand and that you have another of one thousand?

A. Yes, sir.

Q. Have you ever been refused life insurance?

A. No, sir.

Q. Have you ever been refused any insurance that you applied for.

A. No, sir.

Q. Have you been a frequenter of soda fountains?

A. Yes, sir.

Q. What drink do you call for when you do frequent soda fountains?

A. Coca-Cola.

Q: How long have you used Coca-Cola?

A. I have used it for the last ten or twelve years.

Q. Could you give me the average or approximate amount that you have daily used?

A. Well, it has been in the past about four or five a day.

Q. Do you use it now?

A. Not so much as I have been using it.

Q. Why did you stop using it?

A. Because it cost too much money.

Q. Do you use coffee?

A. In the winter time.

Q. Do you drink it in the summer at all?

A. No, sir.

Q. Do you use tea?

A. Yes, in the summer.

Q. Do you use cocoa?

A. No.

Q. Do you use tobacco?

A. Yes, sir.

Q. Do you use alcohol?

A. No, sir.

Q. Do you use any other stimulant or sedative?
A. No, sir.
Q. How does Coca-Cola affect you?
A. It don't affect me at all.
Q. Are you in perfect health, so far as you know?
A. I am.
Q. Have you had any serious illness during the last five years.
A. No, sir.
Q. I now hand you this paper, is that your signature?
A. It is.
Q. Where was that paper signed?
A. It was signed in this building.
Q. Well, in whose office was it signed?
A. Some Doctor's office.
Q. Do you remember the names of the doctors who were there?
A. No, you introduced them to me, but I don't remember their names, you know I meet so many people.
Q. Did this doctor that you met at the time you signed that paper, did these doctors, I mean, did they not examine you?
A. They did examine me.
Q. At the time of your examination that you refer to, had you been spoken to immediately before the examination was made of you?
A. Yes, sir.
Q. Now, Mr. Morrison, look at that paper.
A. All right sir. (Witness examine paper.)
Q. Is this paper, the statements in it true?
A. Yes, sir, of course it is true.

Mr. Hirsch: I ask the reporter to mark this paper exhibit to this witness's deposition. I desire to offer this paper as a part of the evidence of this witness.

(On objection of Mr. Miller the blank is excluded by the Court.)

"H. C. HEINZ,

the next witness, called on behalf of the claimant and intervenor, the Coca-Cola Company, being of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. Henry Charles Heinz.
Q. And what is your occupation?
A. Banking.
Q. What is your age, Mr. Heinz?

A. I am thirty.

Q. Do you carry any insurance?"

(This evidence was excluded by the court, which is as follows):

A. Yes, sir.

Q. How many policies have you?

A. Four.

Q. Do you know the date of the issuance of the first and last policy?

A. No, I do not exactly.

Q. Could you give them to me approximately?

A. Well, one thousand dollars in the Union Central, dated in 1890, and three one thousand dollar policies in the Northern, dated 1909.

Q. Could you give me the total amount of your insurance?

A. Yes, five thousand dollars.

Q. Have you ever been refused life insurance?

A. No.

"Q. Mr. Heinz, do you take any drinks at soda fountains?

A. I do.

Q. What drinks do you usually take?

A. Mostly Coca-Cola.

Q. How long have you used Coca-Cola?

A. Fifteen years.

Q. Could you give me the average amount daily you have used during that period approximately?

A. Approximately three to four glasses.

Q. What is your present daily use of Coca-Cola?

A. Four glasses approximately.

Q. Do you use coffee?

A. Rarely ever.

Q. Or tea?

A. No, sir.

Q. Or Cocoa?

A. I do not.

Q. Do you use tobacco?

A. I smoke cigars and a pipe.

Q. Do you use alcohol, Mr. Heinz?

A. Moderately.

Q. Do you use any other stimulant or narcotic?

A. No, sir.

Q. How does Coca-Cola affect you?

A. Well, so far as I have been able to find out, it has no effect on me.

Q. Well, are you in perfect health as far as you know?

A. I am.

Q. Have you had any serious illness during the last five years?

A. I was never sick a day in my life.

Q. Do you have any desire to increase the number of Coca-Colas that you take?

A. No, sir.

Q. Have you any desire to drink, coffee, I mean increase the amount of coffee that you drink?

A. I have not.

Q. I hand you this paper, is this your signature?

A. It is.

Q. Well, examine that paper carefully and tell me whether the answers to the questions therein are the truth?

A. They are.

Q. Mr. Heinz, do you remember under what circumstances that paper was signed and where?

A. Well, after a very close physical examination up in Dr. Boland's office, or Dr. Robert's office, I disremember.

Q. What doctors were present?

A. Dr. Frank Boland and Dr. Stewart Roberts and another doctor, I forget just now.

Q. Why do you drink Coca-Cola, Mr. Heinz?

A. Because I enjoy the drink.

Mr. Hirsch: I desire to offer the statement handed the witness in evidence, and will ask the reporter to mark the same as exhibit to the testimony of the witness".

(On objection of Mr. Miller the blank is excluded by the Court.)

"BY MR. HIRSCH:

Q. Mr. Heinz, do you travel a great deal?

A. Well, in vacation, in summer time.

Q. Do you drink an equal number of glasses of Coca-Cola when you are away from Atlanta as when you are in Atlanta?

A. Yes, sir, I do."

NO CROSS EXAMINATION.

Subscribed and sworn to before Harrison Jones, a Notary Public of Atlanta, Ga., this 9th day of March, 1911.

ROBERT J. GUINN,

the next witness, called on behalf of the intervenor, the Coca-Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your occupation?

A. Life Insurance.
Q. What is your age?
A. Forty-four.
Q. How many life insurance companies are you insured in?

(The evidence as to life insurance was excluded by the Court, which is as follows:)

A. I am insured in three.
Q. Can you give us the number of policies?
A. You want the number of them?
Q. Yes.
A. You mean the amount?
Q. No; the number of policies; how many in number?
A. Well, I have got six in one company and two in one, and one in another.
Q. Can you give me the date of the issuance of the first policy approximately, or when the first policy was issued?
A. It was issued in 1892.
Q. Can you give me the date of the issuance of the last policy?
A. Yes, 1909.
Q. Have you been refused insurance, Major Guinn?
A. Well, not for sixteen or eighteen years, I was not refused them. I have had a different kind of a policy offered me, I applied for one kind and got another, but that was, as I recall now, on account of my weight, excess in weight.
Q. Well, do you frequent soda water fountains?
A. Yes, sir, some times.
Q. What drink do you take, if you take anything, or when you take anything?
A. I drink Coca-Cola and lime, chocolate, cream soda.
Q. How long have you used Coca-Cola, Major Guinn?
A. I don't know, several years, or so probably I have been drinking it at fountains.
Q. Can you give us approximately, about how many years?
A. Really, I do not know, but I reckon I have been drinking it off and on ever since it came out.
Q. Can you give us about your average daily drinking of Coca-Cola?
A. Well, I don't average any daily. I sometimes drink a glass and sometimes two glasses. I never drink over two glasses a day.
Q. Do you drink two glasses every day?
A. No, sir.
Q. Do you use coffee, Major?
A. Yes, sir, but I have only been using that far a few

years; I used to use it regularly, and I had to cut it out, and the last two or three years, I have been using it twice a day at least.

Q. Do you use tea?

A. Yes sir, at times.

Q. Do you use alcohol?

A. Only as a sort of medicine, sometimes I take a drink at home if I want it.

Q. Do you use any other stimulants or sedatives?

A. No sir, except tobacco.

Q. How does Coca-Cola affect you, if it all?

A. You mean in what way?

Q. Yes, does it affect you in any way?

A. Well, it is a pleasing sort of a drink, I enjoy drinking it, I know that.

Q. Are you in perfect health, so far as you know?

A. Yes, sir, as far as I know; my digestion is not good all of the time.

Q. Have you had any serious illness during the last five years?

A. I never had any in my life that I know of.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. I do not believe that you stated your residence?

A. Atlanta, Georgia, I supposed I stated that.

Q. Where do you drink coffee — why did you quit coffee?

A. Why did I quit coffee?

Q. Yes.

A. My digestion got out of fix and I was eliminating a whole lot of things to find out what was doing me the harm, and I struck upon the idea of drinking just as much hot water for breakfast as I could stand, and did not feel like drinking much of anything.

Q. Then you were having trouble with your stomach?

A. Yes, sir, that was ten or twelve years ago."

(The following, in reference to life insurance was excluded by the Court:)

Q. Well, how about this insurance that you were turned down on that you applied for?

A. That was because of excessive weight I weighed at the time I made the application two hundred and thirty-five pounds, and that was too heavy for my height and age.

Q. Well, now the great number of drinks that you take at soda fountains, you don't take those every day, this number of drinks that you speak of, of lime, chocolate, and so on?

A. Oh no, very frequently, for instance, I have not taken anything at a soda fountain. You see that was just to show that when I went in, the line of drinks that I would take, I was giving about the line of my drinks there.

Q. Then you frequently take a drink at soda fountains?

A. I almost every day drink something — I always drink something at a soda fountain every day I suppose.

Q. Then you will average one a day?

A. Yes, I guess I will, but I don't always take the same drink, sometimes it is Lithia water.

Q. Did you ever keep an account of the Coca-Cola drinks that you have taken during a day?

A. No, I don't run any account of it, sometimes I drink a glass or two of Coca-Cola in the morning; it is a very refreshing sort of a drink to me, I like it in the summer, and if I were going out to take a drink, I think Coca-Cola is the best drink; of all bottled drinks I would rather have Coca-Cola.

Q. Is it a matter of taste or effect?

A. Well, I could not say as to whether there is any effect except the effect of or consequence of an agreeable drink for an occasion of that sort.

RE-EXAMINATION,
BY MR. HIRSCH:

Q. Major, is that your signature?

A. Yes.

Q. Now, under what condition did you sign that statement, Major?

A. Why I was examined by, if I recall, by a couple of doctors at the time. That is, it was in Mr. Roberts' office, I believe.

RE-CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. You went to their office for the purpose of being examined?

A. Yes, sir.

Q. You didn't go previous to that time?

A. No, sir.

Q. They didn't know anything about this ——

A. I was asked by, I believe it was Mr. Asa Warren Candler if I objected to having an examination made of myself, and I told him not in the least, and I think that he asked me if I would object to being examined.

Q. That was the only examination made?

A. Yes, sir, and about two or three days after they asked me if I could come up to Dr. Roberts, and I told them "yes".

Q. You were never examined before or since by them?
A. Well, no, not any similar examination to that.
Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Ga., March 9, 1911."

B. J. KING,

the next witness, called on behalf of the claimant, the Coca-Cola Company, of lawful age, being duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. My name is B. J. King.
Q. What is your occupation?
A. Banking.
Q. What is your age?
A. Twenty-eight.
(The following in reference to life insurance was excluded by the Court):
Q. How many life insurance companies, if any, are you insured in?
A. One.
Q. Do you know the date of the issuance of that policy?
A. No, I do not.
Q. What is the amount of the insurance?
A. Twenty-five hundred dollars.
Q. Have you ever been refused any insurance, Mr. King?
A. No, sir.
Q. Mr. King, do you go in to soda water fountains?
A. Yes, sir.
Q. What drinks do you take?
A. Usually Coca-Cola.
Q. How long have you used it approximately?
A. Oh, I guess twelve years.
Q. Could you give me about the average daily amount that you drink of Coca-Cola, I do not mean exactly.
A. Oh, about two glasses.
Q. What is your present daily use of it, if any?
A. About that amount.
Q. Two glasses you mean?
A. Yes, sir.
Q. Do you use coffee, Mr. King?
A. Yes, sir.
Q. About how much?
A. Two cups a day.

Q. Do you use tea?
A. No, sir.
Q. Do you use cocoa?
A. No, sir.
Q. Do you use tobacco?
A. Yes, sir.
Q. About how much, and in what form?
A. I smoke three or four cigars a day.
Q. Do you use alcohol?
A. No, sir.
Q. Do you use any other stimulant or sedative?
A. No, sir.
Q, Are you in perfect health so far as you know?
A. Yes, sir.
Q. Have you had any serious illness during the last five years?
A. No, sir.
Q. Look at that statement and tell me if that is your signature?
A. Yes, sir.
Q. Under what circumstances did you sign that paper, Mr. King, and where?
A. What do you mean by that?
Q. Where were you.
A. Stewart Roberts' office.
Q. And who is he?
A. A doctor, a physician.
Q. Was there any other physician present then?
A. Yes, sir.
Q. Do you remember their names?
A. No sir — wait a minute — let me see now — oh, I have forgotten his name, I don't remember now.
Q. Was Dr. Boland present?
A. No, sir.
Q. Was Dr. Faullin present?
A. Yes, sir.
Q. Did either of these doctors make an examination of you at the time you signed this paper.
A. Yes, sir.
Q. Do you live in Atlanta, Georgia?
A. Yes, sir.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. How much coffee do you drink, Mr. King?
A. About two cups a day.
Q. In the morning and evening?
A. Yes, sir.

Q. And drink Coca-Cola in between?
A. Yes, sir.
Q. Usually two a day?
A. Yes, sir.
Q. What is your height?
A. About five feet, ten inches.
Q. And what is your weight?
A. About a hundred thirty-eight.
(The following in reference to life insurance was excluded by the Court):
Q. Have you ever been rejected for insurance?
A. No, sir, never have.
"Q. This examination that you spoke of was made about how long ago?
A. The date is on there. About six months ago, I think.
Q. Were you ever examined by these physicians before that?
A. No, sir.
Q. Or subsequent to that?
A. No, sir.
Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Ga., March 9, 1911."

"SAMUEL FRANCIS BOYKIN,
the next witness, called on behalf of the claimant, the Coca-Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. Samuel Francis Boykin.
Q. What is your occupation?
A. I am Vice-President and Manager of the E. F. Pratt Laboratory.
Q. What is the nature of that business?
A. They are manufacturing chemists.
Q. What is your age?
A. Thirty-seven my next birthday."
(The following in reference to life insurance was excluded by the Court):
Q. How many life insurance companies are you insured in?
A. Four I think, the Prudential, the Volunteer State Life, and the Aetna, and some secret orders insurance, four I think.
Q. How many policies are there, just give me the nuber of policies?

A. I have two in the Prudential, two in the Volunteer State Life, one in the Actna and one in the Royal Arcanum.

Q. Do you remember the date of the issuance of the first policy, Mr. Boykin?

A. No sir, I do not.

Q. Can you give it to me approximately?

A. It is about '94 or '95, I should think.

Q. What is the total amount in dollars of your insurance?

A. Did you say the total?

Q. Yes.

A. Fifteen thousand dollars.

Q. Have you ever been refused insurance?

A. Yes, sir, by the Northwestern.

Q. What was the date of that refusal?

A. Well, I came to Atlanta in 1891, I think it was about 1894 or 1895.

Q. What was the reason assigned for it?

A. Heart murmur.

Q. Mr. Boykin, do you frequent soda water fountains?

A. Yes, sir.

Q. What drink, if any, do you take?

A. I usually take Coca Cola.

Q. How long have you been using Coca Cola?

A. I expect for twenty years.

Q. Could you give me about the amount you use, average daily use of Coca Cola?

A. Yes, sir, I always take two, and I expect on occasions I drink three or four or five, I mean on Sundays, that I drink about three or four or five.

Q. Do you use coffee?

A. Yes, sir.

Q. Give me about the amount of coffee?

A. Well, I usually use coffee morning and night in the winter, and morning only in the summer; I drink tea in the summer at night.

Q. Do you use cocoa?

A. No, sir.

Q. Do you use tobacco?

A. Yes, sir.

Q. About how much?

A. I suppose somewhere from four to five cigars a day, and I also chew.

Q. Do you use alcohol?

A. No, sir, not at all.

Q. How does Coca Cola affect you, Mr. Boykin?

A. Not at all, just the same as water.

Q. Are you in perfect health so far as you know?
A. Yes, sir.
Q. Have you had any serious illness during the last five years?
A. No, sir, I had typhoid fever in 1898, yes, about 1897 or 1898.
Q. Mr. Boykin, I hand you this paper, is that your signature?
A. Yes, sir.
Q. Under what circumstances and where were you and what were the conditions that you signed that paper under? First, I will ask you where were you when you signed that?
A. I was in this building.
Q. Whereabouts in this building?
A. In a Doctor's office, I forget the name of the Doctor now.
Q. Dr. Roberts' office?
A. Yes, sir.
Q. Was Dr. Roberts present?
A. Yes, sir, and also a doctor over here at the State capital.
Q. Was that Dr. Paullin?
A. Yes, sir, Harris's assistant.
Q. Did these doctors examine you?
A. Yes, sir.

CROSS EXAMINATION,

BY MR. McCONNVILLE:

Q. Did you say that you drink two glasses of Coca Cola every day and three or four on Sunday? How long have you been doing that?
A. Well, I don't know, I suppose I have been drinking Coca Cola for twenty years, and I suppose for the last ten years I have been drinking that much, more or less.
Q. How do you know the number of glasses you drink?
A. Because I drink one of a morning and one in the evening.
Q. Invariably?
A. Yes, sir, as a rule.
Q. As a rule — would you mean invariably by that?
A. Yes, sir, when in Atlanta I do.
Q. Were you in Atlanta most of the time?
A. Yes, sir.
Q. You never missed any days?
A. Why, I can't say that if I am at home.

Q. You won't say you do drink it, but your opinion is that you drink two a day?
A. If I am at my office I do, if I am not at home."

(The following in reference to life insurance was excluded by the Court):

Q. Now this time that you were turned down for insurance, you say that was sixteen years ago?
A. Well, that was about 1894, as I recall. The doctor says that it was from excessive bicycle riding; about that time everybody was crazy on the subject of bicycles, and I rode a great deal.
Q. Well, what was the trouble with your heart?
A. Heart murmur was what the doctor said, but I have since gotten insurance.
Q. There is no trouble with your heart now?
A. No, I don't think so.
"Q. Have you been examined recently other than this examination about which you have been asked?
A. Yes, less than a year ago.
Q. You were never examined by these particular people before or after that time?
A. No, sir."

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March 9, 1911.

"WILLIAM PRATT HEATH,
the next witness called on behalf of the claimant, the Coca Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. William Pratt Heath.
Q. What is your occupation?
A. I am a chemist at the Pratt Laboratory.
Q. What is your age?
A. Thirty-five."

(The following in reference to life insurance was excluded by the Court):

Q. How many life insurance companies are you insured in, if any?
A. Four, I think.

Q. How many policies, number of policies have you?
A. I have five.
Q. Mr. Heath, do you remember the date of the issuance of the first of your policies?
A. The first one is about I think about thirteen years old.
Q. The first policy is thirteen years old?
A. Yes, sir.
Q. Do you remember the date of the issuance of the last one?
A. The last one has been about thirty days.
Q. What is the total amount in dollars of your insurance?
A. Nine thousand dollars.
Q. Have you ever been refused insurance?
A. No, sir.
"Q. Do you go into soda water fountains?
A. Yes, sir.
Q. Do you take drinks there; soft drinks?
A. Yes, sir.
Q. What drinks do you take?
A. I nearly always drink Coca Cola.
Q. How long have you been drinking Coca Cola, Mr. Heath?
A. Over ten years.
Q. Could you give me approximately the amount of Coca Cola that you use a day, the average amount approximately?
A. Two a day, one in the morning and one in the afternoon, and sometimes three a day.
Q. Do you drink them on Sunday?
A. Yes, sir.
Q. Do you use coffee, Mr. Heath?
A. Yes, sir.
Q. How much coffee a day will you estimate?
A. Well ——
Q. (Interrupting) I don't ask you the exact amount.
A. One cup, and sometimes two cups.
Q. Do you use tea?
A. No.
Q. Do you use cocoa?
A. No, sir.
Q. Do you use tobacco?
A. No, sir.
Q. Do you use alcohol?
A. No, sir.
Q. Mr. Heath, are you in perfect health so far as you know?

A. Yes, sir.

Q. Have you had any serious illness during the last five years?

A. No, sir.

Q. Is that your signature to that paper?

A. Yes, sir.

Q. Under what circumstances and where did you sign that?

A. In the office of Dr. Boland and Dr. Roberts, I think.

Q. Did Dr. Boland and Roberts make a physical examination of you?

A. Boland, Roberts and Paullin, I think.

Q. You live in the City of Atlanta, Georgia?

A. Yes, sir.

Q. Do you go out of Atlanta, Georgia, much?

A. No, just occasionally a year.

Q. Do you drink Coca Cola when you go out of Atlanta?

A. No, if it don't taste right.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. You drink two glasses of Coca Cola a day?

A. Yes, sir, every day. I usually drink only one on Sunday, I drink on Sunday only one, and on week days two.

Q. On week days you drink two?

A. Yes, sir.

Q. How do you know that you drink two?

A. Well, ——

Q. Do you keep an account of it?

A. There might be a time when I would miss one, but nine days out of ten I drink two, one in the morning and one in the evening.

Q. Do you feel like you need it?

A. No, sir, I don't feel that I need it, it is a kind of a little recreation to step out of the office, and I generally go with a man who I know, and if he is not in town, very often I don't go.

Q. Then you do not get two every day?

A. No, not every day, I do not on Sundays.

Q. But I am speaking exclusively of Sundays.

A. Well, nine days out of ten, I says, that is about true."

Subscribed and sworn to before Harrison Jones, Notary Public at Atlanta, Georgia, March 9, 1911.

Whereupon at 12:00 o'clock M. the Court took a recess until 12:20 p. m.

AFTER RECESS:

Thereupon the Court is met at 12:20 o'clock p. m.

Mr. Candler: I will now read the following depositions:

"MELVIN W. HUBBARD,

the next witness called by the claimant, the Coca Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?

A. Melvin W. Hubbard.

Q. What is your occupation, Mr. Hubbard?

A. Furniture, manager of the furniture department of Rich Brothers.

Q. What is your age?

A. Thirty-nine, will be forty next December."

(The following in reference to life insurance was excluded by the Court):

Q. How many insurance companies are you insured in?

A. Two.

Q. How many policies have you?

A. Three.

Q. Do you remember the date of the issuance of the first policy?

A. Not exactly, it is seven years old, I think it is in September.

Q. Do you remember the date of the issuance of the last one?

A. 15th of November, two years ago.

Q. What is the total amount of the life insurance that you carry?

A. Seven thousand dollars.

Q. Have you ever been refused insurance?

A. No, sir.

"Q. Do you frequent soda fountains?

A. Pretty often.

Q. What drink or drinks do you take?

A. Coca Cola.

Q. How long have you used Coca Cola, approximately?

A. Somewhere between seventeen and eighteen years, it has been that long since I began to drink it.

Q. Now, approximately, what are the average number of drinks a day of Coca Cola that you take?

A. Two to three.

Q. Do you drink it on Sundays the same way?

A. Yes, sir.

Q. Do you go out of the city any, Mr. Hubbard?
A. About four times a year.
Q. Where do you go?
A. To Chicago and Grand Rapids.
Q. Do you drink it while you are away?
A. No, sir.
Q. Do you use coffee?
A. Yes, sir.
Q. About how much?
A. A cup a day.
Q. Do you use tea?
A. No.
Q. Do you use cocoa?
A. No, sir.
Q. Do you use tobacco, and if so, in what form?
A. I smoke.
Q. How many cigars do you smoke a day?
A. About five.
Q. Do you use alcohol?
A. No, not enough to say that I use it.
Q. Mr. Hubbard, how does Coca Cola affect you, if in any way?
A. I can't see that it affects me at all.
Q. Are you in perfect health so far as you know?
A. Yes, sir, so far as I know.
Q. Have you had any serious illness during the last five years?
A. Well, five years ago, in September, I had typhoid fever.
Q. Is this your signature to this paper?
A. Yes, sir.
Q. Where were you when you signed that?
A. In Dr. Roberts' and doctor somebody else's office upstairs here.
Q. Was it Dr. Boland?
A. Yes, sir.
Q. Did these doctors examine you?
A. Yes, sir, they did.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. Are these doctors your family physicians?
A. No, sir.
Q. Did you ever meet them before this examination?
A. Dr. Roberts and Dr. Boland, you mean?
Q. Yes, I mean professionally?
A. No, sir.
Q. They never made any examination of you prior to

that time or subsequent to that time?

A. No, sir.

Q. You say you drink at least two glasses of Coca Cola?

A. Yes, sir, two to three and sometimes more, I will average two a day.

Q. You keep a record of that fact, do you, or do you remember the number of drinks?

A. No, I don't keep a record of it.

Q. Do you remember the number of drinks?

A. Yes, sir.

Q. Then how do you know that you take it, the quantity you have stated?

A. Well, about how often that I get out is when I take one, just when I get thirsty.

Q. Well, if you do not get out, then what happens?

A. Well, we have got a place in the store, it is usually handy.

Q. You must have it?

A. No — No.

Q. You say you do not have to have it?

A. No, I drink it about as I drink a glass of water, water will do me just about as well."

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March, 9, 1911.

"CARLOS LYENS,

the next witness called by the claimant, the Coca Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?

A. Carlos Lyens.

Q. Mr. Lyens, what is your occupation?

A. Real estate.

Q. What is your age?

A. Thirty-six."

(The following in reference to life insurance was excluded by the Court):

Q. Is your life insured?

A. Yes, sir.

Q. In how many companies?

A. Only one at the present, in the Union Central.

Q. Do you remember the date of the issuance of that policy?

A. It was about seven or eight years ago.

Q. What is the amount of that?

A. Six thousand dollars.

Q. Have you ever been refused life insurance?
A. No.
"Q. Mr. Lyens, do you go into soda fountains quite often?
A. Well, I just came from one.
Q. Do you take any drinks in there?
A. Yes, sir.
Q. What drinks do you take, Mr. Lyens?
A. Principally Coca Cola.
Q. How long have you used Coca Cola?
A. Why, I suppose between fifteen and twenty years, somewhere along there, ever since I have been large enough to go up to the soda fountain.
Q. Could you give me approximately the average number of Coca Colas that you take?
A. About two, that is about my present daily average, about two.
Q. Do you use coffee?
A. No.
Q. Do you use tea?
A. No.
Q. Do you use cocoa?
A. No.
Q. Do you use tobacco?
A. Yes, sir.
Q. In what form?
A. Cigars and cigarettes and pipe.
Q. Do you chew?
A. No, sir.
Q. Do you smoke extensively?
A. Yes, sir.
Q. Do you use alcohol?
A. Yes.
Q. Excessively?
A. No, I hope not.
Q. Mr. Lyens, how does Coca Cola affect you?
A. Not that I know of, I never experienced any effects from it to amount to anything.
Q. Are you in perfect health so far as you know?
A. Yes, sir.
Q. Have you had any serious illness during the last five years?
A. No, sir.
Q. I hand you this paper, is that your signature?
A. Yes, sir.
Q. Where was that signed?
A. In a doctor's office here in this building.
Q. Do you remember the name of the doctor?

A. I do not.
Q. Did this doctor examine you?
A. Yes, sir, it was rather thorough.
Q. Do you go out of the city much?
A. No, sir.
Q. When was the last time you were out of the city?
A. Why last December a year ago.
Q. Do you drink Coca Cola while away from here?
A. Yes, sir, that was in Washington, D. C.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. You drink two glasses?
A. Yes, sir.
Q. Invariably?
A. Yes, sir, usually right after I come into town — I live out in the country — I come in about between eight and nine, and usually about half an hour after I get to the office in the morning I take one, and then about half hour after I get back from dinner. I never drink it at night.
Q. Why do you want Coca Cola?
A. Well, just force of habit I guess more than anything else."

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March 9, 1911.

"HENRY SANDERS ROWLAND,
the next witness called by the claimant, the Coca Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. Henry Sanders Rowland.
Q. What is your occupation?
A. Bookkeeper.
Q. What is your age?
A. Well, I will be thirty-seven in April."

(The following in reference to life insurance was excluded by the Court):

"Q. Mr. Rowland, do you carry any life insurance?
A. Do I carry what?
Q. I say, do you carry any life insurance, any insurance in any life insurance companies?
A. Yes, sir.
Q. How many insurance companies are you insured in?
A. Three.
Q. How many policies have you got, I mean in number?

A. Do you want the accident policies, too?
Q. No, you may exclude that.
A. Well, eight.
Q. What is the date of the issuance of the first policy?
A. Well, I don't remember, but it has been possibly ten years ago.
Q. Do you remember the date of the issuance of your last one?
A. Yes, sir, that has been about, I believe I have paid my fourth premium.
Q. Then it would have been about four years since you took out the last one?
A. Yes, sir.
Q. What is the total amount of insurance in dollars that you have?
A. Well, it is about twelve thousand dollars.
Q. Have you ever been refused any insurance?
A. No, sir.
"Q. Where are you employed at present?
A. At the Bowden Lithia Water Springs Company.
Q. How long have you been there?
A. Ten days.
Q. Where were you before that time?
A. With the Coca Cola Company.
Q. In what respect?
A. Bookkeeper.
Q. Mr. Rowland, do you go into soda fountains any?
A. Yes, sir.
Q. What drinks, if any, do you take?
A. I drink Coca Cola.
Q. Anything else?
A. Lime and lithia.
Q. How long have you used Coca Cola?
A. How long?
Q. Yes, about?
A. I guess seventeen years?
Q. Could you give me about the average daily use of Coca Cola, I mean your average daily use?
A. Well, about six glasses a day.
Q. Your present daily use is about that, is it?
A. I have to buy it now — possibly I average three a day now.
Q. Do you use coffee?
A. Yes, sir.
Q. How much coffee do you drink a day?
A. One cup.
Q. Do you use tea?
A. Well, occasionally.

Q. Do you use alcohol?
A. No, sir.
Q. Do you use tobacco?
A. Yes, sir.
Q. In what form?
A. Well, moderately, I smoke cigars.
Q. Do you chew tobacco?
A. Not at the present, I have chewed it.
Q. How does Coca Cola affect you, if in any way at all?
A. Not at all.
Q. Are you in perfect health so far as you know?
A. Yes, sir.
Q. Have you had any serious illness during the last five years?
A. No.
Q. Mr. Rowland, is that your signature there to that paper?
A. Yes, sir.
Q. Where was that signed and under what conditions and circumstances?
A. That was signed in this building, I forget the doctor's office, there were at the time making some tests.
Q. Do you remember the names of the doctors that were present when that was signed?
A. I do not.
Q. Was Dr. Roberts present, Stewart Roberts?
A. I declare, Mr. Hirsch, I never saw them before, and was just introduced to them you know.
Q. Did these doctors examine you?
A. Yes, sir, they did.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. This number of Coca Colas you drink, about how long a time have you been doing this?
A. About three glasses a day now.
Q. About three glasses a day now?
A. Yes, sir.
Q. Are either of those exact figures?
A. Oh, yes, when I was with the Coca Cola Company I rarely ever drank anything without Coca Cola in it.
Q. You did not number the glasses?
A. Yes, sir, I have drank more than that.
Q. You will state that as an average?
A. Yes, sir.
Q. You drank six a day while you were with the Coca Cola Company?
A. Yes, sir.

Q. I was trying to find out how you struck that average?

A. Well, some days I would not drink but three or four, other days I would drink eight or ten, it was owing to how my thirst was. Sometimes, you know a man won't drink any water at all.

Q. Oh, yes, I understand.

A. Well, that was the way it was with me.

RE-EXAMINATION,
BY MR. HIRSCH:

Q. Do you drink as much in the winter as you do in the summer, or is it about the same?

A. Well, no, of course in summer it is hot and you get thirsty, and I want a nice drink, something that is cooling more than I do in the winter time."

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March 9, 1911.

"EDWARD EMMETT DOUGHERTY,
the next witness called on behalf of the claimant, the Coca Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?

A. Edward Emmett Dougherty.

Q. What is your occupation, Mr. Dougherty?

A. I am an architect.

Q. How old are you?

A. Thirty-four."

(The following in reference to life insurance was excluded by the Court):

Q. Do you carry any insurance, Mr. Dougherty?

A. Yes, sir.

Q. How many life insurance companies are you insured in?

A. One.

Q. What amount of dollars of insurance in that policy?

A. Five thousand dollars.

Q. Have you ever been refused life insurance?

A. No, sir.

"Q. Do you go into soda fountains?

A. Yes, very often.

Q. What drinks, if any, do you take?

A. I generally take Coca Cola.

Q. How long have you used Coca Cola, Mr. Dougherty?
A. I think I began when it was first manufactured. I went abroad and was without it for five or six years and didn't have any, and came back and began taking it again.
Q. How, during the time that you were drinking Coca Cola, about what was your average daily amount, in drinks that you took.
A. I suppose I would average two a day.
Q. Would that constitute your daily drinking of Coca Cola?
A. You mean the number of drinks a day?
Q. Yes.
A. Practically the same.
Q. That is your present daily number?
A. Yes, sir.
Q. Do you go out of the city a great deal, Mr. Dougherty?
A. Sometimes, yes.
Q. Do you go East very often?
A. Yes, sir.
Q. Do you drink the same there as you do here?
A. I don't find that it tastes exactly the same in the East.
Q. Do you drink it?
A. No, sir, I don't drink it much because I don't think it is as good as it is here.
Q. Do you use coffee?
A. Yes, sir.
Q. About how much coffee?
A. Well, about one cup a day.
Q. One cup a day?
A. Yes, sir, and sometimes two.
Q. Do you use tea?
A. Sometimes, but not often.
Q. Do you use cocoa?
A. Very seldom.
Q. Do you use tobacco?
A. Yes, sir.
Q. In what form?
A. Cigars.
Q. About how many a day do you use?
A. About six a day.
Q. Mr. Dougherty, does Coca Cola have any effect on you?
A. Coca Cola — why I know it does not, I have never noticed any.
Q. Are you in perfect health so far as you know?
A. Yes, sir.

Q. Have you had any serious illness during the last five years?

A. No, sir.

Q. I hand you this paper with your signature to it, Mr. Dougherty. Is that your signature?

A. Yes, sir.

Q. Where was that signed, do you remember?

A. I can't say that I do remember just where I was.

Q. Do you remember under what conditions you signed it — were any doctors present?

A. Yes, I think so. I am not sure, but I think that is the paper that I signed when I was in Dr. Boland's office.

Q. Was Dr. Roberts present?

A. Yes, sir.

Q. Did those doctors make an examination of you?

A. Yes, sir.

CROSS EXAMINATION,

BY MR. McCONNVILLE:

Q. How often do you leave Atlanta?

A. I generally get away once or twice a year.

Q. What length of time are you gone away?

A. Generally I get to New York once a year to spend a week or two.

Q. You don't drink Coca Cola in New York?

A. I have perhaps had two or three Coca Colas up there?

Q. You don't like it.

A. I don't like it as well as I do here, I find that it does not taste anything like it does here.

Q. Then you have used it in New York?

A. I have drank it there.

Q. Does it have any effect or anything like that on you?

A. No, no craving effect or anything like that. For instance, I ordinarily drink two a day, but I have only had one today. Then sometimes I will drink three a day, but I don't think I ever went over three.

Q. And you go some days without it?

A. Yes, sir, possibly so.

Q. Would you drink it if you could get it in New York?

A. Oh, you can get it in New York.

Q. I mean if you could get it there similar to what you get it in Atlanta?

A. Yes, sir, I think I would, but it don't put me out much if I don't get it though."

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March 9, 1911.

WILLIAM HENRY REYNOLDS,

the next witness called on behalf of the claimant, the Coca Cola Company, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. What is your full name?
A. William Henry Reynolds.
Q. What is your occupation?
A. Barber.
Q. Where is that barber shop located?
A. In the Candler Building.
Q. What is your age?
A. Thirty-seven."

(The following in reference to life insurance was excluded by the Court):

Q. How many life insurance companies are you insured in, if any?
A. One.
Q. What is the total amount in dollars of that insurance?
A. Twelve hundred dollars.
Q. Have you ever been refused insurance?
A. No, sir.

"Q. Mr. Reynolds, do you take any drinks at soda water fountains?
A. Yes, sir.
Q. What drink or drinks, if any?
A. Coca Cola, mostly.
Q. How long have you used Coca Cola?
A. Twelve to fifteen years.
Q. Mr. Reynolds, do you live in Atlanta?
A. Yes, sir.
Q. Do you ever leave Atlanta?
A. Yes, sir.
Q. And where do you go?
A. To New York State.
Q. Do you drink it in New York State?
A. Why, I never drank it up there.
Q. Well, when you are in Atlanta, what is your average a day that you drink of Coca Cola?
A. From four to six.
Q. Is that your average daily use of it?
A. Yes, sir.
Q. Do you drink coffee?
A. Yes, sir.
Q. Do you drink tea?

A. Yes, sir, some.
Q. Do you use cocoa?
A. No.
Q. Do you use alcohol, Mr. Reynolds?
A. Some.
Q. In what form?
A. Why beer and whisky, I don't use it as much as I used to.
Q. Do you use tobacco?
A. Yes, sir, smoke.
Q. What do you smoke?
A. Cigars and cigarettes.
Q. Do you smoke to any great extent?
A. Yes, sir.
Q. Mr. Reynolds, does Coca Cola affect you in any way?
A. No, sir, not in any way that I know of.
Q. Are you in perfect health so far as you know now?
A. Yes, sir.
Q. Have you had any serious illness during the last five years?
A. No, sir.
Q. I hand you this paper, is that your signature?
A. Yes, sir.
Q. Do you remember where you were when you signed it?
A. Dr. Roberts' and Dr. Boland's office.
Q. Did these doctors examine you at the time you signed that?
A. Yes, sir.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

Q. Are these two doctors your regular physicians?
A. Why, no.
Q. They never examined you before?
A. No, sir.
Q. How do you know you drink four or six glasses a day?
A. I always drink four.
Q. You always drink four?
A. Yes, sir, two in the morning and two in the afternoon, and sometimes I go up to as far as six.
Q. Why didn't you drink it in New York?
A. Why, I never liked it up there, you know it seems flat or dead.
Q. You have tried to get it up there?
A. I have gotten it up there.
Q. If you could get the same up there, you would drink

it there, would you?

A. Yes, sir, but the Coca Cola seems to be flat up there, and don't seem good to me.

Q. You have a craving for Coca Cola?

A. No, I don't think so.

Q. Well, then, why did you drink it so regularly?

A. Well, I like it as a rule — you asked me the reason why I drink it, I simply tell you I don't know.

Q. Does it have any effect on you if you do not get it?

A. I didn't understand you.

Q. Now, I say, does it have any ill effect on you if you do not get it regularly?

A. No."

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March 9, 1911.

"ROBERT IRVING GRESHAM,

the next witness called on behalf of the claimant, the Coca Cola Company, of lawful age, being first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH.

Q. Mr. Gresham, what is your full name?

A. Robert Irving Gresham.

Q. What is your occupation?

A. I am manager of Dahr, florist.

Q. What is your age, Mr. Gresham?

A. I was born in 1884, that would make me twenty-seven."

(The following in reference to life insurance was excluded by the Court):

Q. Do you carry any life insurance?

A. Yes, sir.

Q. How many companies do you carry life insurance in?

A. One.

Q. What is the value of that policy, the amount of it, the face value of it?

A. One thousand dollars.

Q. Have you ever been refused life insurance?

A. No, sir.

"Q. Do you go into soda fountains often?

A. Yes, sir.

Q. Do you take any drinks there?

A. Yes, sir.

Q. What drink or drinks do you take at soda fountains?

A. Coca Cola.

Q. How often do you use Coca Cola, for about how long?

A. Well, I answered that question before, I don't know what I did say right now. Years ago, I have used it for ten or twelve years though.

Q. Could you give me about the average amount of drinks of Coca Cola that you take a day?

A. Of Coca Cola?

Q. Yes.

A. Well, I believe anywhere from three to five, sometimes more and sometimes less.

Q. Do you drink it away from Atlanta?

A. Yes, sir.

Q. Do you use coffee?

A. Yes, sir.

Q. About how much?

A. A cup or two cups a day.

Q. Do you use tea?

A. No, sir.

Q. Do you use cocoa?

A. No, sir, I drink all of them but very little.

Q. Do you use alcohol in any form?

A. Yes, sir.

Q. Do you smoke?

A. No.

Q. Mr. Gresham, does Coca Cola affect you that you know of?

A. No.

Q. Are you in perfect health so far as you know?

A. Yes, I am.

Q. Have you had any serious illness during the last five years?

A. No.

Q. Mr. Gresham, is that your signature on that paper?

A. Yes, sir.

Q. Do you remember when and where you were when you signed that?

A. Yes, sir.

Q. Where was it?

A. It was in some doctor's office, I don't know what floor of the Candler Building.

Q. Do you remember the name of the doctor?

A. No, I do not remember his name.

Q. Was it Stewart R. Roberts, Dr. Frank L. Boland or Dr. J. Paullin?

A. Well, as far as my memory serves me right now, I did not take any note any way. I did not know them personally.

Q. Was it Dr. Frank Boland?
A. No, it was Roberts, he was the man.
Q. Did these doctors examine you?
A. Yes, sir.

CROSS EXAMINATION,
BY MR. McCONNVILLE:

(The following in reference to life insurance was excluded by the Court:

Q. When did you take out life insurance?
A. I think it has been about four years ago.
Q. Four years ago?
A. Yes, sir.
Q. Had you drank Coca Cola before that time?
A. Yes, sir.
Q. And subsequent?
A. Yes, sir, I have been drinking it I guess six or eight years, or had been before that time.

Subscribed and sworn to before Harrison Jones, Notary Public, Atlanta, Georgia, March 9, 1911.

"STIPULATION OF COUNSEL.

Atlanta, Georgia, March 9, 1911.

It is hereby stipulated by counsel that the following named persons would testify, if called as witnesses, substantially as the thirteen preceding witnesses, and that the claimant, the Coca Cola Company, may have the benefit by this stipulation of their testimony as if given, and that the slips showing examinations of these witnesses may be used and treated as proven, to as full an extent as testified to by the preceding thirteen witnesses in their depositions.

The persons whom this stipulation is intended to cover going as follows:

Revis, Wm. Farrell, medical student, Roswell, Ga.

Peters, Edgar, medical student, 93 Luckie St., 790 Spring St.

Heaton, Geo. Roy, medical student, 93 Luckie St., 92 Ellis St.

DeVane, James G., medical student, 93 Luckie St., 790 Spring St.

Massey, Nathan N., salesman, Coca Cola Co.

Rainwater, Chas. V., secretary Coca Cola Bottling Co., Candler Building.

Snyder, Chas. F., bookkeeper, 170 Mills St.

Rich, Lester H., merchant, 52-6 Whitehall St., 330 South Pryor St.

West, Robt. L., contractor, Candler Bldg.

Rogers, Virgial, salesman, city.

Logan, Jos. Clayton, manager Assc. Ch., Gould Bldg.
Fall, Mark A., auditor, Coca Cola Co., 770 Piedmont Av.
Underwood, Mar'. S., Gen. Elec. Co., Empire Bldg., 45 W. Baker St.
Morrison, Nellie I., saleslady.
Candler, Walter T., bank teller, Candler Bldg., 92 Euclid Av.
Massengale, G. B., adv. mgr., Candler Bldg., 474 Capitol Av.
Angier, Kedom L., clerk Massengale's, Candler Bldg., 30 Capitol Av.
Wright, A. R., stenographer, Candler Bldg., 131 Capitol Avenue.
Mashburn, W. O., cashier Coca Cola Co., Coca Cola Co., 212 Euclid Av.
Neville, C. R., shipping clerk, Coca Cola Co.
McEntyre, Mrs. Rosa, manicurist, Candler Bldg., 112 Mills St.
Powell, May, manicurist, (killed in accident.)
Owen, Willie Belle, stenographer, Candler Bldg., 11 Park Av.
Candler, A. W., lawyer, Candler Bldg.
Moore, Jno. W., lawyer, Temple Ct. Bldg.
Crumley, Wm. G., student, 40 Forrest Ave.
Hunter, Mary R., stenographer, Candler Bldg., 139 Forrest Av.
Langley, Emmet R., draper (Rich's), 52-6 Whitehall St., 73 Neal St.
Dobbs, Harry L., soda dispenser, 231 Marietta St.
Goodman, Chas. B., draughtsman, 67 N. Pryor St.
McKibben, J. A., elevator setter, Candler Bldg.
Brasswell, Jno. T., salesman, 53 Peachtree St., 20 Josephine St.
Owens, Jno. G., real estate, Candler Bldg.
Hirsch, Harold, lawyer, Candler Bldg.
Padgett, Ben R., contractor, Candler Bldg., East Lake.
Moxley, Hugh L., manager Sou. S. Co., College Park.
Jones, Mary Rhett, stenographer, 2 Wellington Apts.
Lindsay, Dorothy, cashier, Candler Bldg., 20 Ellis St.
Wells, Mrs. H. I., housekeeper, 69 W. Harris St.
Benson, Maggie M., clerk, 211 Angier Ave.
Wells, May, stenographer, 69 W. Harris St.
Little, Margaret, stenographer, 43 Peachtree St.
Morris, Joseph E., orchardist, 165 E. Pine St.
King, Barrington J., Candler Bldg., banker.
Thornton, Nat., dentist, College Park.
Ackler, Mrs. K. B., auditor, 260 Glennwood Av.
Lagomarisino, Chess, dispenser, 546 S. Pryor St.

Crane, Allen S., salesman, 51 Simpson St.
Bishop, Luther J., soda dispenser, 42 Summitt Av.
Hays, Wm. J., merchant, 161 Peachtree St., 384 Peachtree St.
Dorsey, Minnie, housekeeper, 210 S. Pryor St.
Small, Oscar D., orchardist, Candler Annex, 50 Richardson St.
Holland, J. Sid., auto salesman, 46 Auburn Av.
Bowen, Chas. A., insurance, 4th N. B. Bl., 269 Forrest Av.
Minor, Howard K., clothier, 39 Whitehall St., 534 Woodward Av.
Eubanks, Richard M., dental student, 500 Central Av.
Gary, T. F., clothier, 39 Whitehall St.
Roberts, J. H., insurance, 203 Empire Bldg.
Schell, Wm. L., shoeman, 39 Whitehall St.
Parks, Wm. Scott, salesman, 367 Capitol Av.
Hardwick, John W., clothier, 39 Whitehall St.
Hawes, Fred W., druggist.
Campbell, Wm. J., real estate, East Point, Empire Bldg.
Hadley, Frank M., optician, Hawkes.
Parker, R. S., lawyer, Brown, Randolph.
Harwell, Chas. O., tailor, 113 N. Pryor St.
Davies, M. M., lithographer, 65 E. Ala. St.
Picard, Jno. A., druggist, The Grand.
Shelton, Chas. B., lawyer, Candler Bldg.
Robert, Lawrence W., engineer, Candler Bldg.
Motes, Rush L., florist, 123 Peachtree St.
Hudson, D. Noon, clerk, East Point, Ga.
Matthews, Robt. G. C., electrician, East Point, Ga.
Crenshaw, Hansell, physician, Ponce de Leon Av.
Sauls, Henry C., student, Marietta, Ga.
Ross, Thos. L., lumberman, Thomasville, Ga.
Wilkinson, Chas. F., manager, Bedford Place.
Frissell, H. G., student, 316 Lee St.
Smith, A. C., student, 141 W. Baker St.
Cooper, John H., student, Commerce, Ga.
Carter, H. G., student, 5 Trinity Av.
Clegg, John F., Jr., bookkeeper, 190 E. Pine St.
Lyon, Paden, student, 102 W. Cain St.
Marston, John, mechanic, 66 S. Delta Place.
Coggins, W. P., engineer, 223 W. North Av.
Woods, Geo. M., student, 53 Orme St.
Spencer, Chas. A., stenographer, East Point, Ga.
Welchel, C. D., student, 158 Washington St."

LOUIS SCHAEFER,

recalled to the stand for further cross-examination, testified as follows:

CROSS-EXAMINATION.

BY MR. MILLER:

Q. When you used the term "hydrocarbon" in your examination heretofore, is it not true that you referred to toluol?

A. Yes, sir.

Q. Now, this hydrocarbon that is carried into the powdered coca leaf, or toluol, how is it introduced, all at once or gradually?

A. Gradually.

Q. Probably during what period of hours does that toluol undergoing process obtain?

A. Several hours.

Q. By that you mean probably how many?

A. Two to three hours.

Q. I understand you that you put this powdered coca through that process more than once?

A. It is a continuous process, percolation or toluol through the coca leaf.

Q. The toluol is introduced how?

A. It is introduced by a pipe line through a tank standing about four feet above the iron percolator.

Q. Does the toluol or the tank in which it is contained before it is introduced into the powdered coca, heated or not?

A. It is not heated.

Q. What is the temperature, approximately of the toluol when it is introduced into the powdered coca?

A. Fifteen to thirty degrees Centigrade.

Q. Then I understand that the gradual process through which the coca goes, the treatment of toluol after the coca is dried and ground up, is a gradual treatment of from two to four hours?

A. Yes, sir.

Q. Thereby the toluol goes entirely through the powdered coca?

A. Through every part of the powdered cocoa.

Q. What is your alkaline that is added to the water?

A. I revealed the nature of the same to Doctor Fuller and Doctor Emery Saturday afternoon.

Mr. Miller: Are you gentlemen willing to take their statements?

Mr. Hirsch: Yes, is was given in my presence, and we will accept the statement he made to Doctor Emery and Doctor Fuller.

BY MR. MILLER:

Q. Approximately, what is the minimum amount of water that is needed to liberate the cocaine from one of

those percolators, aided by this alkaline substance?

A. About equal parts of water to the weight of the coca leaf.

Q. Now, when the coca is alkalized, does this fall into the iron percolators?

A. Yes, sir.

Q. In cylindrical shape?

A. Of cylindrical shape.

Q. What is the process by which it is taken in the iron percolators?

A. It is carried into those percolators.

Q. How is it carried?

A. By hand.

Q. Does that mean by bucket or shovel?

A. A man carries always two buckets and goes up on top of this iron percolator and pours the powdered coca into the percolator.

Q. He takes it up by shovel or something of that nature and dumps it into the bucket?

A. Yes, sir.

Q. It then comes in contact with the air?

A. Yes, sir.

Q. And then is carried to this —

A. (Interrupting) In cylindrical shape into the percolator.

Q. Now, when this hydrocarbon, or toluol, is run by gravity from the tank that stands about four feet higher than the coca, it runs from the coca it runs into, there is no pressure brought to bear on it at all, it simply runs of its own force or by gravity?

A. Exactly.

Q. How many times does the coca undergo this extraction process before you are prepared to utilize it, or before you do utilize it in Merchandise No. 5?

A. Until all the cocaine and associated alkaloids are removed from the coca leaf.

Q. How do you determine that?

A. It was determined by a great number of analyses and is regularly controlled in the laboratory.

Q. I will ask you if you are prepared to state how many times that is, if you have the number of times it goes through the process, or whether it depends entirely on the quantity or quality of the coca you are using.

A. It depends upon the volume of the hydrocarbon used for the extractive process.

Q. Then, if I understand you correctly, after the hydrocarbon has been once put through, you continue to put the hydrocarbon or toluol through again?

A. It is a continuous process.

Q. Does the hydrocarbon that is run through it once come back and run through it again?

A. Not in that way. I wish to explain. The hydrocarbon takes the cocaine and associated alkaloids out of the coca leaf. The oily solution is run into a copper cylinder and this copper cylinder contains a solution of sulphuric acid, that is a certain volume of diluted sulphuric acid. In this copper cylinder, the oil is shaken with this diluted sulphuric acid. The sulphuric acid takes all of the alkaloids out, also the hydrocarbon. After that e hydrocarbon is permitted to settle in the copper cylinder the sulphuric acid solution collects in the bottom of the copper cylinder containing also alkaloids, the toluol, or hydrocarbon, on top of the sulphuric acid solution is then entirely free from the alkaloids and can be used over again in the same extractive process.

Q. Then it is a fact that after the toluol is run through first that is undergoes this sulphuric acid treatment, and then it is brought back into the tank and filtered through again.

A. Exactly.

Q. Now, when you speak of the oil solution, you mean toluol, of course?

A. Exactly.

Q. When you speak of taking out the cocaine and associated alkaloids, what are the associated alkaloids?

A. There is besides the cocaine a number of other ecgonin derivatives, chiefly isatsopylecgonin and cynamilecgonin and a few others which have not been so far properly identified.

Q. Then you are not prepared to say just what is taken out except that you know that cocaine is taken out?

A. Cocaine and also the ecogonin derivatives, of which I mentioned the two principal ones.

Q. And some others you are not prepared to state as to what they are?

A. Yes, sir.

Q. Is the percolator heated or not?

A. No, sir.

Q. When you speak of diluted alcohol being filled into this tank, you mean California wine?

A. Excuse me, Mr. Miller. Dilute alcohol is used only in part two of the process to make Merchandise No. 5. In the first part, the decocainized process of the coca leaf, no dilute alcohol is used.

Q. That does not answer my question: is it a fact that you use California wine in this connection?

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A. Not in the process of extracting the alkaloids from the coca leaf. I use California wine in making Merchandise No. 5 from the decocainized coca leaf and cola nut.

Q. Then you do use California wine in preparing merchandise No. 5?

A. I use California wine and alcohol.

Q. California wine contains a certain amount of tannin, does it not, Doctor?

A. I do not know that.

Q. You don't know whether it does or not?

A. I do not know.

Q. This dilute alcohol approximately of 25 per cent strength to which you referred, now what is the remainder of it, that is, the other eighty per cent?

A. Water, perhaps a small quantity of solids.

Q. You mix that alcohol with wine, as I understand it?

A. I use alcohol in the process of making Merchandise No. 5, if California wine is too high in price. It is altogether a matter of price of the wine or of the alcohol.

Q. Is it not a fact that wine contains entirely a difdilute alcohol and wine?

A. Not so far as the content of alcohol is concerned. I make from the alcohol a dilute alcohol of the same alcoholic strength as the California wine is.

Q. Yes, but is it not a fact that one of them contains tannin and the other does not?

A. I don't know whether the California wine contains tannin or not.

Q. Is it not a factt hat wine contains entirely a different flavor or rather has a different flavor from that of dilute alcohol?

A. Every alcohol has a different flavor. It depends upon the source from which the alcohol is distilled.

Q. Do you or not agree that dilute alcohol has a different flavor or taste from that of California wine?

A. I am convinced it has, but every alcohol differs in its flavor, according to the source from which the alcohol is distilled. An alcohol distilled from wine has a different flavor from one prepared from rye or corn.

Q. What character of alcohol do you use, when you do use alcohol in making this mixture, that is, from what source is it distilled or procured?

A. This is a commercial 95 per cent alcohol.

Q. Is it obtained from rye or what?

A. I did not investigate from what source it comes. The material thing for me is to have the alcohol.

Q. Then, if I understand you, the different alcohols have different flavors or tastes; is that right?

A. Slightly different. The tastes of the different alcohols will slightly differ, no doubt.

Q. You use these commercial alcohols of 95 per cent strength indiscriminately, if I understand you?

A. It is all a question, as I stated before, of the price of California wine.

Q. Then, if you go out to buy alcohol to use in making this Merchandise No. 5, it depends entirely upon the price as to which kind of alcohol you get?

A. Which is cheaper, in the manufacture of Merchandise No. 5.

Q. Now what becomes of the residue of this coca after it is decocainized by reason of the toluol and after it is brought into contact with the wine and the dilute alcohol, as the case may be—what becomes of the powder itself?

A. The powder, after the alcohol extraction, is destroyed. It is burned up in my boilers.

Q. That is, the very great proportion of the substance itself is burned up?

A. Exactly.

Q. Is it or is it not true that in the process or treatment of taking out the alcohol and alkaloidal substance, you include in that what might be termed the resins and sap of the coca, or do you know how that is?

A. There is, of course, a certain accumulation of chlorophyll and wax in the toluol. The toluol will lose its extractive power if it would be used over and over again without being distilled from time to time.

Q. Now, to distill it again, you heat it up?

A. It is a simple process. From time to time, the toluol used in the extraction process is pumped into a still and in this still, the toluol is distilled over, the contents of pure toluol is freed from wax and chlorophyll which remain in the still.

Q. My question is, that in treating this powdered coca with the toluol in the manner in which you do treat it, alkalizing it, so to speak, the toluol treatment, if there is or not with alkaloidal substances which you say are removed along with the principal alkaloid which is cocaine, also the resins and fats as they are termed.

A. Yes, sir; not only wax but also chlorophyll.

Q. Then they are removed in that process?

A. They are also removed in the same process.

Q. Then the toluol is freed from that and reintroduced into the powdered coca?

A. Exactly; it is freed from time to time.

Q. Have you ever attempted to isolate or determine fully all that is removed during this process of treatment?

A. No, sir.

Q. You are not prepared to say what is removed or what is left?

A. What do you mean by what is removed?

Q. I mean the whole of the substances that are removed from the mixture.

A. What mixture?

Q. The mixture of toluol and the powdered coca.

A. I don't fully understand your question.

Q. I mean this. I am not a scientific man, I know, but have you ever attempted to determine or are you prepared to say what is removed in addition to the alkaloid proper, namely the cocaine, along with the extraction process of the cocaine?

A. From the coca leaf is removed together with the cocaine, the alkaloids, some of the chlorophyll in the coca leaf and the waxy or fatty matter.

Q. Have you ever attempted to isolate any other substance except the alkaloid or cocaine?

A. No, sir.

Q. Then you are not prepared to say what, if any, proportion of tannin is removed in that process?

A. There is no tannin removed in that process.

Q. How do you know when you say you never attempted to isolate it.

A. Because toluol does not dissolve any tannin whatsoever. All tannins are insoluble in toluol, so they have to stay behind in the coca leaf.

Q. Is not tannin removed by any kind of process that removes chlorophyll?

A. No, sir.

Q. Do you base that statement not on your experimentation but purely on your knowledge as a chemist?

A. Exactly.

Q. Do you know what percentage of tannin is in coca?

A. I never made the determination.

Q. You know what percentage of tannin is in the cola nut?

A. I never made the determination.

Q. Do you know what percentage of tannin is in wine such as you would use in this mixture?

A. I never made the determination.

Q. Do you know of any process by which tannin content of the three might be disassociated, or the tannins of the three isolated after once being mixed?

A. By the usual method of determining tannic acid.

Q. I understand the three could be determined in that way, but I say, after you mix the three in one mass, can

you disassociate?

A. Certainly not.

Q. You can not?

A. No, sir.

Q. Do you know or can you give us what organic bodies or substances there are in Merchandise No. 5?

A. No, sir.

Q. You never attempted to determine that?

A. No, sir.

Q. When was your contract to supply the Coca Cola Company with Merchandise No. 5 made?

A. About eight years ago.

Q. It was made eight years ago next May; to refresh your recollection, was it not made ten years ago, and was it not made in May, 1904?

A. I could not tell you that exactly, but I would say from seven to eight years.

Q. Where was it made?

A. The contract was made out in proper form —

Q. I am not asking you for the contents, but where did you make it? Where did you gentlemen meet?

A. What gentlemen?

Q. The gentlemen with whom you negotiated the contract.

The Court: What is the materiality of that?

Mr. Miller: Must I go on record as showing that?

The Court: It appears entirely immaterial to me.

Mr. Miller: I propose to show that up to the time of this contract, cocaine had been in this mixture.

The Court: I don't see that the place where they met to make the contract had any bearing on that.

Mr. Miller: I think that will corroborate a witness that we shall place on the stand.

The Court: I don't think the question of where the contract was made has anything to do with the question of whether cocaine was in it before.

Mr. Miller: Only so far as corroborative of the witness that was present at the making of that contract. I ask it for that purpose purely and simply.

The Court: I hold it immaterial, and until it becomes necessary, will not allow it.

BY MR. MILLER:

Q. Now, state whether or not one of the clauses of that contract was that the mixture you furnished was not to contain cocaine?

A. I don't think that is a stipulation of the contract, but I cannot state postively.

Q. Was the contract in writing?

A. It is understood that Merchandise No. 5 I supply should be entirely free from cocaine.

Q. That was the contract from the beginning, was it not?

A. Exactly.

Q. And that was the understanding from the beginning?

A. Exactly.

Q. I will ask you whether that contract was negotiated in part with Judge Candler, who sits here, of counsel for The Coca Cola Company?

A. My recollection is that it was first negotiated with Mr. Asa G. Candler.

Q. Was Judge Candler present at the consumation of the contract?

A. I could not tell now. I have so many things in my mind all the time that I could not really state whether Judge Candler was present there or not.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. In the process of manufacturing Merchandise No. 5, is the toluol, which you use as an extractive body, removed from the mixture?

A. Absolutely.

Q. Now again: you say when you put that tuluol through the powdered coca leaf, it takes out a certain portion of the chlorophyll and wax?

A. Yes, sir; exactly.

Q. And then you afterwards run the same toluol back through the coca leaves again?

A. Exactly.

Q. On the second and third percolations—the subsequent percolations, does the toluol take out as much chlorophyll and wax as it would the first time?

A. The toluol oil, when it comes first to the coca leaves, takes a large percentage of chlorophyll and wax out and in subsequent treatments, there is less in the coca and consequently it will take less out afterwards.

Q. But it takes out on the subsequent percolations—it still continues to take out the alkaloids?

A. You mean the chlorophyll and wax?

Q. It still continues to take the alkaloids out?

A. Oh, yes, the alkaloids.

Mr. Miller: I object to that as leading.

The Court: The objection is sustained and the answer excluded.

BY MR. SIZER:

Q. After you have run the toluol through the powdered

coca leaf the first time, do you then take the same toluol and run it through another time?

A. Yes, sir; it is a continuous process; it is used over and over again.

Q. When you take it through the first time, it takes out a certain percentage of the chlorophyll and wax?

A. Yes, sir.

Q. When you take it and run it through another time, does it it take out the same proportion of chlorophyll?

A. It takes out less because the great part of the chlorophyll and wax has been removed during the first process by the toluol.

Q. Do you run that same toluol through the same batch of leaves, or do you run it through another batch?

A. This is a matter of convenience. In fact, there are several percolators connected in, so to say, a chain of extractors. I have described the process only to make my description simple—I have described how it runs through one percolator.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. You steam the coca after the toluol has gone through it?

A. Yes, sir.

Q. What heat is that steaming at?

A. It will come to one hundred degrees Centigrade.

Q. That is to carry away, certainly, the volatile substances?

A. It carries away the hydrocarbons from the extraction.

Q. And it would carry any other volatile substances that would be discharged at that temperature?

A. That would be carried away at the same time.

Q. You have never determined exactly what is carried away chemically?

A. I never did.

Q. Never tried to determine precisely what was carried away or what was left?

A. No, sir.

Q. Now, this mixture you make up of Merchandise No. 5 consists of how many gallons to the one percolator or measure of that coca leaf.

A. It consists of 450 gallons of 20 per cent alcohol to one percolator.

Q. 450 of the alcohol?

A. Of the dilute alcohol.

Q. And how much of the cola is added to the mixture?

A. To this volume of diluted alcohol, sixty-two and a half pounds.

Q. Of what?

A. Powdered cola nut.

Q. To that is added what?

A. To that is added 190 pounds of decocainized coca.

Q. Didn't you state that 900 gallons of this mixture was taken as a certain quantity, the other day, or a certain amount of mixture made 900 gallons?

A. Yes. You first asked me how much I used as a result of one percolator. I put in one percolator 190 pounds of coca leaf which is exactly one-half the quantity I gave the other day, so that in doubling all the figures I have given, you will find that you get the same proportion, that is 900 gallons of diluted alcohol, 380 pounds of powdered coca and 125 pounds of powdered cola nut.

Q. How much does that make of the finished product?

A. It will make 900 gallons.

Q. Now, this 20 per cent which you speak of, what does that consist of?

A. As I stated before, 20 per cent alcohol, and the rest is water and a small quantity of solids, if California wine is used.

BY MR. SIZER:

Q. I want to get a little more definitely at this extractive process. You say you run the toluol through a batch of coca leaves and take out the alkaloids?

A. Yes, sir.

Q. That takes out some of the alkaloids and also extracts some chlorophyll and wax?

A. Exactly.

Q. Then you go and subject that to a process that takes away the alkaloid that may be in it?

A. Yes, sir, exactly.

Q. Does that process take out the chlorophyll and wax in the toluol?

A. No, sir.

Q. That leaves it in the toluol?

A. Yes, sir.

Q. Then you use that toluol again through a fresh batch of leaves?

A. Yes, sir.

Q. Now, in consequence of the fact that the toluol has on the first process absorbed a lot of chlorophyll and wax, will it take as much chlorophyll and wax on the second?

A. No, sir; its power to dissolve wax and chlorophyll is slightly reduced.

BY MR. MILLER:

Q. On what do you base that statement, just tell us.

A. That is by long experience.

Q. You say you have never made any analysis or test, what do you base it on?

A. I did not say that I had made no analyses or tests. On the contrary, I made a great many. That is, I have them made in my works daily as that is the most essential thing I have to do, to make proper investigation of my process.

Q. But if I understand you, you have never examined on that point to ascertain?

A. To reply to your question, I wish to mention that wax and chlorophyll are of no practical importance whatsoever in the extraction of coca leaf or in the preparation of Merchandise No. 5. Cholorphyll is insoluble in water. It would not be taken out from coca leaf if the coca leaf would be treated with water or dilute alcohol. It would stay in the coca leaf so it is a substance which does not come practically into consideration whatever in the process we are referring to.

Q. Would this dilute alcohol you speak of have any effect on the chlorophyll when brought into contact with it?

A. It will not dissolve chlorophyll.

Q. Will it have any effect on it?

A. I don't think so, nor would it have any effect on the waxy matter.

(Witness excused.)

DR. JOHN WILLIAM MALLET,
recalled as a witness herein, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Have you had occasion to examine Muccioli, and if so, state what it is?

A. It is a book written by the Italian writer Muccioli, a modern toxicology.

Q. You heard Doctor Morgan's testimony?

A. Yes, sir.

Q. Doctor Morgan stated in his testimony that Muccioli gave the lethal dose for caffeine. Does Muccioli give the lethal dose for caffeine?

A. No, sir; his statement refers to the toxic dose.

Mr. Miller: Are you offering Doctor Mallet as a toxicologist?

Mr. Hirsch: No, sir; to translate this work.

BY MR. HIRSCH:

Q. It is the toxic dose he gives.

A. Yes, sir.

Q. What words do you find in the work to distinguish the toxic dose and the lethal dose?

Mr. Miller: I submit we should have the text read.

The Court: He can read from it and then may hand the work to the counsel.

A. In many places in the book the two terms are used so as to show with what dose the meaning is there employed.

Mr. Miller: I object to that because he is not qualified as a toxicologist and therefore is not prepared to speak on that subject. Counsel has definitely and distinctly said that he is not offering him as a toxicologist.

The Court: He is offering him for the purpose of making a translation.

Mr. Miller: But he offers his conclusion as to certain passages in the book.

The Court: I understand that he is reading the passage.

A. In reference to the poison aconitine the statement is that the toxic dose is from one milligram up and the lethal dose, that is, the fatal dose, is four milligrams.

BY MR. HIRSCH:

Q. What are the two words there used?

A. "Tossica."

The Court: That means "toxic?"

The Witness: That is the dose which will produce symptoms of poisoning.

The Court: And the other?

The Witness: "Le tale" or the fatal dose.

The Court: Now, when it comes to caffeine, what is the word?

The Witness: "Tossica" only, no other.

The Witness: There are numerous other places where the two words are used side by side.

BY MR. HIRSCH:

Q. Do you understand the Italian language?

A. Sufficient for scientific purposes, but I am not a finished literary Italian scholar by any means.

Q. Now I want to find out about Merchandise No. 5, the analysis you have made as to the substances in No. 5—whether you determined the amount of solid matter and how.

A. I did determine the amount of solid matter by evaporating off the alcohol and water and weighing the residue.

Mr. Miller: What?

The Witness: Evaporating off the alcohol and weighing the residue.

BY MR. HIRSCH:

Q. Did you determine from the solid matter what per cent was from the coca leaves and what per cent was from the cola nuts?

A. You didn't ask me the amount but I should say that there was a little over five ounces to the gallon of solid matter content. It is impossible for me to state the proportion of that which came from the coca leaves or the cola nuts. There are several minor factors which have to be examined which I do not know, but I should approximate it by stating that if these minor factors be neglected, as, for instance, the small amount of soda that passes from the removal of the cocaine into the solution, into the alcohol, if they be neglected, and if you subtract the one per cent of cocaine and alkaloids extracted from the coca leaf, the per cent of the solid matter from the coca leaf and kola nut together would be divided between the amount dissolved out in the formation of the solution, Merchandise No. 5 and woody fibre and other insoluble matters that are left and neglecting these minor factors the proportion would be 55 per cent of the solid matter dissolved out and 45 per cent of insoluble matter left in the residue of the coca leaf and kola nut that is thrown away. Making a liberal allowance for the other solid matter held in the solution, I should say from 30 to 35 per cent of joint coca leaf and kola nut must be present in Merchandise No. 5.

Q. I ask you if it is possible in the flavoring extract used in soda fountains to determine quantitatively the amount of flavor you use.

A. As soda water is used generally?

Q. Yes.

A. In a majority of cases it is not. It can be ascertained by a test, simply that they are present, but for the most part they are substances of an indefinite character and of such complex nature that the quantity could not be stated. The quantity might be very small.

Q. Now, the solid matter that you testified about, the five ounces of solid matter, is that held in solution in Merchandise No. 5?

A. Certainly.

Q. Do you know whether or not the coffee bean contains any cane sugar?

A. I do not know of my own knowledge, but it is so recorded.

Q. In roasting this coffee, what becomes of the cane sugar?

A. It is converted for the most part into caramel.

CROSS-EXAMINATION.

BY MR. MILLER:

Q. What portion of the coffee bean is caffeine?

A. It varies. It is commonly taken as something like one and a half per cent.

Q. What reaction takes place with the tannin of wine when treated with gelatine?

A. I could not answer that. There are different wines and they vary, and I cannot say what percentage one would give.

Q. Have you ever tested California wine?

A. I do not think I did test California wine in making Merchandise No. 5.

Q. Then you are not prepared to say what would be the result of the test with gelatine upon the tannin as contained in California wine?

A. No, sir. In a majority of the wines, I believe it would give a precipitate with gelatine, but I would not say that as to all wines or as to this particular California wine.

Q. What reaction, if any, takes place with the tannin of California wine when treated with cinchonine?

A. I will have to give the same answer.

Q. That you never tried it and do not know?

A. Precisely.

Q. What reaction takes place with the tannin of cola when treated with gelatine?

A. I think I have a note of that, but I am not sure, and I do not think I have the note with me—no, this refers to the tannin from the coca leaves and does not contain any reference to the kola.

Q. You need not state as to that, then.

A. I cannot now, but I am not sure whether I could ultimately.

Q. Did you ever make any test or are you prepared to state as to what reaction takes place when you treat the tannin of cola with cinchonine?

A. No, sir—same answer.

Q. That is, you do not know?

A. I do not know now and I am not sure whether I determined it or not.

Q. As I recall your examination in chief, you stated that you did not try to separate the various tannins, if there were more than one contained in those supposed mix-

tures that were sent to you.

A. No, sir; I examined the reactions of all the tannin-like bodies present collectively.

Q. But you did not attempt to isolate any one of the various tannins to determine what percentage of it was present?

A. No, sir; I do not believe it is possible to do so.

Q. Do you state that tannin of coca does or does not give a precipitate with gelatine and cinchonine?

A. As to the coca leaf, I do not know that it does not give a precipitate.

Q. Taken altogether, you found in Merchandies No. 5 approximately three per cent., I think, of what you term "extractive matter," tannin and other substances, including "etc."?

A. No, sir; that was not in Merchandise No. 5; that was in the analysis of Coca Cola syrup.

Q. Since the time you were called to the witness stand the other day, have you attempted to ascertain or isolate the substances that went to make up that small percentage of three or four per cent, as the case may be? I have not your figures before me, as I did the other day.

A. No, sir, I did not. As I remarked when I was on the stand before, I do not believe it is possible to do so and to express the results accurately.

Q. You have not made any tests in Chattanooga?

A. No, sir.

Q. Have you witnessed any that were made by Doctor Caspari?

A. No, sir.

Q. Are you prepared to state from your experiments as to what difference there is, if any, in the solubility of the tannins of coca, of kola, or of California wine?

A. I do not understand the question. California wine is not dissolved; it is a solvent.

Q. There is tannin in it?

A. Do you mean as to the degree of solubility?

Q. Yes.

A. No, sir; I do not know.

Q. Then you are not prepared to say that they would be dissolved out in the same proportion as they were present in the original substance if you have made no experiments?

A. No, sir; except to this extent: that I believe the amount of alcohol and water together is far more than sufficient to dissolve the tannins from the three sources you have named.

Q. But you could not tell what that proportion would

be by looking at the substance?

A. No, sir.

Q. Are you familiar with Pilocarpus leaves?

A. What?

Q. Jaborandi is the technical name.

A. No, sir.

Q. Are you familiar with the tannin of Belladonna leaves?

A. No, sir.

Q. Or with stremonium leaves?

A. No, sir.

Q. Or slippery elm leaves?

A. No, sir.

Q. Or with witch-hazel leaves?

A. No, sir.

Q. Or digitalis leaves?

A. No, sir. Never examined any of those.

Q. Or Mandrake leaves?

A. No, sir.

Q. Do you know whether or not they all contain tannins?

A. I think they all contain it. It is so reported but I have no such knowledge of my own.

Q. They are all more or less common?

A. They are common drugs.

Q. Are you prepared to state, and if so from what experiments, that any particular kind of coca as distinguished from any other kind of coca or any other variety of coca, is used in Coca Cola mixture, and if so, state it.

A. I only know from reading. I have no knowledge of my own. I know there are two principal varieties of coca on the market, commonly used.

Q. You have never made but the one test and that is with respect to the Coca Cola syrup and the infusion of coca itself, which you procured?

A. Tests for what?

Q. This test that you stated the other day you resorted to to ascertain whether or not there was certain tannin in the mixture.

A. My experiment was made with an infusion of coca leaves which I myself prepared.

Q. What variety of coca was that?

A. The specimen came from Maywood and I have understood, but that is not my knowledge, that it was Truxillo.

Q. So that of your own knowledge you have no knowledge as to whether is was Truxillo or a different variety?

A. No, sir.

Q. Of your own knowledge you do not know that it was coca at all?

A. I have seen so many specimens of coca leaves that I am quite confident it was coca.

Q. Of some kind?

A. Yes, sir.

Q. Do you know what percentage of tannin there is in coca?

A. No, sir.

Q. Do you know what the precentage of tannin is in cola?

A. No, sir.

Q. Do you know what the percentage of tannin is in California wine?

A. No, sir; except from reading as to what amount has been found in the analysis of a number of specimens. I have no knowledge of my own.

Q. What is the percentage of tannin in California wine based on your reading?

A. My knowledge is limited to this: That I know the total amount of solids as reported is from 1.4 per cent. up to something like 2.00, but how much of that is tannin I do not know.

Q. As to the coca and kola?

A. It is less than that.

Q. You do not pretend to state even from your reading what that is?

A. No, sir.

Q. You do not profess to speak either as to the amount of tannin of all kinds in Merchandise No. 5?

A. No, sir, I do not believe we have the means of determining with any degree of precision.

Q. You do not believe there is any means of determining the percentage of tannin in Coca Cola syrup?

A. Not by itself. I have not pretended to examine it by itself.

Q. How small a percentage of tannin in a given mixtrue can you determine or isolate altogether?

A. It is not a question of the proportion borne to the whole amount, but the getting of an accurate separation of the tannin at all. The tannins are exceedingly unstable. They change readily. They resemble in behavior a good many of the other alkaloid extractive matters and I do not think you can determine it accurately. A great many efforts have been made to determine the amount of tannin in tanning liquids and none of them give results of very great precision. They are all confessedly ap-

proximations and of comparative value only. They can tell that a particular kind of liquor, for instance, oak bark—they can tell whether one bark is better or worse than another, but they do not determine with any precision the percentage of tannin.

Q. How much of this Merchandise No. 5 and how much of the Coca Cola mixture, as you supposed, did you utilize in your tests, that is, what quantities?

A. I made different examinations. The examination or extraction of the tannin, for instance, from the Coca Cola syrup, my recollection is was made with four hundred cubic centimeters.

Q. Now, as to Merchandise No. 5?

A. I think two hundred cubic centimeters, but I cannot say with certainty.

Q. Did you attempt to determine the percentage of non-volatile matter in Merchandise No. 5?

A. Yes, sir; I am giving you the result,—a little over five ounces to the gallon.

Q. I want to get the percentage, and what was that percentage?

A. I did not calculate it in the form of percentages. It is easily done, if you get five ounces to the gallon you have to take the number of ounces that the gallon weighs and say that as that number is to 100, so is five to the answer. I do not remember exactly how many ounces there are to a gallon, 58,000 grains in a gallon of water—it could be easily calculated on paper.

Q. If I understand you, you are not prepared to state how much of that non-volatile matter comes from the California wine if the California wine be used?

A. Not accurately, but by reference to a determined amount of alcohol in California wines I could, but I have no knowledge to make the determination.

Q. What is the percentage of alcohol present in the California wine used in Merchandise No. 5?

A. I said I did not know.

Q. If you do not know —

A. I stated the range of percentage found by others in other samples of California wine.

Q. What is that?

A. It ranged from 1.4 to 2.00 per cent., as far as I have seen, not of tannin, you observe, but of solid non-volatile matter.

Q. Now, what color reaction takes place—what is the difference in the color of the reaction as between tannin of the coca and tannin of the cola?

A. The reactions are generally very similar, I have

not my notes as to the kola nut with me.

Q. What if any difference in appearance has the color when reaction agents are used between the tannin of the California wine and the tannin of the cola?

A. As I said, I could not determine.

The Court: He has stated several times that he has not made any determination about those tannins.

Mr. Miller: That was as to the quantities and I now ask about the color.

A. I also said I made no qualitative examination.

BY MR. MILLER:

Q. If you state you do not know either as to the quantity or the quality or the color, as to either of the three substances,—I will excuse the witness.

The Court: He did not say as to either of the three substances; he said as to California wine.

Mr. Miller: Then I ask, is there any difference in the color of the reaction of kola and coca?

The Witness: I said it was generally similar but I could not give you the precise points of difference without having my notes before me.

BY MR. MILLER:

Q. Have you those notes?

A. Not with me. I did not know I was to be examined on that point.

Q. Those notes are not in Chattanooga?

A. Oh, yes.

Q. Please refresh yourself from them —

Mr. Hirsch: I think that was fully gone into on Doctor Mallet's examination before and it is already in the record as to how he determined the difference between the tannin derived from the kola nut and the coca leaf.

The Court: My impression that was asked. You can look and if it was not you can ask.

A. I can give you all that is material, the two are very similar but there are small differences.

The Court: If the differences have not been brought out, the Doctor can take the stand again.

BY MR. MILLER:

Q. Now, are there any volatile oils that would not be removed that you know of in this percolating process of Doctor Schaefers' that he has described or detailed before you, and after that heating process that he described of the powdered coca, and if so, what are they?

A. There is no evidence that I know of based upon

the isolation of any volatile oils from the coca leaf, but the odor—the peculiar odor is usually attributed to the presence of that class of matter and that odor does undoubtedly exist in Merchandise No. 5 as it does in the infusion of coca leaves.

Q. Do you say it is possible to introduce a substance like toluol and remove the odor of that and not remove the odor of any other oil that was in contact with the powdered coca?

A. I did not testify that there are any volatile oils present. It is merely an assumption usually made. As a matter of fact there is a peculiar odor which is derived from the coca leaves.

Q. Is not there a peculiar odor derived from the toluol?

A. There would be if toluol were present.

Q. When it is introduced in the powdered coca. Now, I ask you whether the same process that would remove the odor of the toluol would not remove the odor of the volatile oils, and if you have made any experiments along that line.

A. I simply say I do not know whether there are any volatile oils present, but that oil is not removed because it is in Merchandise No. 5.

Q. Do you know whether or not the process of Doctor Schaefer would remove it?

A. I do not know whether it would remove it but I know it does not because the odor is there.

Q. That is on the assumption that you got a sample from which it was not removed?

A. Certainly. That sample of Merchandise No. 5—all samples of Merchandise No. 5 that I have seen have that odor.

Q. Are not odors usually due to the volatile oils?

A. Very frequently, but in this case and in a great many others the assumption that the volatile oils are present is based upon the fact that they have the odor. A substance must be volatile to reach the nerves of smell, but whether they are by nature essential oils can only be determined when you get enough of it to examine in another way.

Q. This is the volatile substances?

A. Yes, but whether it is volatile oil or not I do not know.

Q. Did you or not state in your examination originally that the method adopted by Doctor Fuller in his experiments and analyses was defective in any way, and if so, in what respect and on what do you base that statement?

A. As to the determination of caffeine?

Q. As to the determination of the contents of Merchandise No. 5 and Coca Cola syrup.

A. The only criticisms that I made in answer to the question was in regards to the determination of the amount of caffeine. Is that what you refer to?

Q. That is the only criticism that you have to make of his method of analysis?

A. That is the only one.

Q. Now, what is your criticism on that?

A. It was that the animal charcoal which is was specified had been used in purifying the caffeine which was weighed—that that necessarily vitiated the determination made by such process in view of the fact that some of the caffeine was taken up by the animal charcoal along with the coloring matter.

Q. I ask you if you are acquainted with commercial Organic Analysis by Allen.

A. Yes, sir.

Q. T[illegible] is a reputable authority?

A. Yes, sir.

Q. And that is one of the authorities you cited the other day in support of your analysis?

A. Yes, sir.

Q. I read from page 485 of that treatise: (Reading)

> "Charcoal cannot be employed for decolorizing caffeine solutions, without a considerable absorption of alkaloid, which is retained with extreme persistency. If the caffeine isolated be coloured, it may be dissolved in a little hot water, and the filtered solution evaporated to dryness; but there is little difficulty in isolating the alkaloid in a snow-white condition."

Do you agree with that?

A. Entirely, but that does not bear upon the point on which I was formerly examined. I endeavored to make my meaning clear as to the distinction between the sum of the caffeine in a perfectly white condition and the total amount. The use of animal charcoal is proper in the former test and improper in the last.

Q. When caffeine is dissolved in chloroform, will charcoal remove it or not.

A. I cannot tell you from my own experience, but I doubt whether if it was used in the chloroform solution that the coloring matter would be removed, but I do not know.

Q. That you cannot say?

A. No, sir; I was referring to water.

RE-DIRECT EXAMINATION,
BY MR. SIZER,

Q. Does that refer to quantitative tests?

A. What method?

Q. About the animal charcoal.

A. Part quantitative and the other qualitative. If that volume of Allen were given to me I could find out exactly for you. (Book handed to the witness:) Here it is: (Reading)

> "Although the isolation of caffeine in a state of absolute purity may be easily effected, the accurate determination of the proportion of alkaloid present, especially in tea, is attended with great difficulty, and hence most of the published results represent the proportion of caffeine isolated, rather than the amount existing in the substance examined."

Mr. Miller: What book are you reading from? What edition?

The Witness: Allen, the second edition, and that is on page 484.

On the opposite page, Allen goes on:—(Reading)

> "The determination of the alkaloid in tea has recently been the subject of a very large number of experiments in the author's laboratory by C. M. Caines, G. S. A. Caines, and G. E. Scott Smith. The following facts have been fully established" —

He then goes on:

> "Charcoal cannot be employed for decolorizing caffeine solutions, without a considerable absorption of alkaloid, which is retained with extreme persistency. If the caffeine isolated be coloured, it may be dissolved in a little hot water, and the filtered solution evaporated to dryness; but there is little difficulty in isolating the alkaloid in a snow-white condition."

BY MR. SIZER,

Q. Since Mr. Miller has suggested it, have you any other criticism to make of the method used by Doctor Fuller and Doctor Emery?

A. No, sir; I was asked whether the use of animal charcoal rendered the comparison of the different results obtained, unreliable. I does not give them the extent to which the alkaloid is absorbed by the animal charcoal and that is variable. Animal charcoal varies greatly in character and the absorbent character of animal charcoal varies greatly in character and also varies with the temperature; the amount absorbed would vary in any experiment,

and the results of such an examination could not be depended on as accurate results.

Q. Would the alcohol extract all the caffeine from a concentrated substance like Coca Cola syrup?

A. The alcohol would extract it but it would not be desirable to use it on account of the sticky condition in which it would leave the sugar. It would be difficult practically to obtain all the caffeine in solution separated from the sugar.

Q. Would that be possible?

A. I do not say it is not possible, but it would be difficult.

Mr. Miller: Have you ever tried that?

The Witness: I have tried the effects of alcohol on sugar.

Mr. Miller: But not on Coca Cola syrup?

The Witness: No, sir; but as far as refers to sugar, I have done that.

Mr. Miller: You have never tried it for the purpose of removing caffeine from the sugary solution, have you?

The Witness: No, sir; I would not do it for the reason I have mentioned.

Whereupon the court, at two o'clock P. M., adjourned until Thursday, March 30, 1911, at 9 A. M.

CHATTANOOGA, TENNESSEE

THURSDAY, MARCH 30, 1911

NINE O'CLOCK, A. M.

Court met pursuant to adjournment.

Appearances: Same as heretofore.

CLAIMANT'S EVIDENCE CONTINUED.

Mr. Miller: There was one statement, if your Honor please, of Dr. Wesener the other day. If he is here I would like to have him recalled because I have had Gademer translated in the meantime.

The Court: All right.

DR. J. A. WESENER,

recalled as a witness herein testiled as follows:

RECROSS-EXAMINATION, CONTINUED, BY MR. MILLER:

Q. Doctor, when you stated that persons had been known to take thirty to forty-five grains of caffeine, you were asked for a citation and said it came from Gademer. I will ask you if that was the text-book of Chemical Toxicology by Dr. Gademer that you referred to?

A. Yes, sir; I believe it was.

Q. And if the literal translation is not this: "As symptoms of caffeine poisoning, the following are to be named: burning in the throat and stomach, vomiting, sense of pressure in the head, buzzing in the ears, restlessness, palpatation of the heart, shortness of breath,trembling of limbs, stiffness of the muscles, desire to urinate. This is caused by paralysis of the heart. Symptoms of poisoning may appear after two grams of caffeine, which means three grains."

A. You say two grams?

Q. Yes, I said two grams,—I meant two-tenths of a gram,—"But daily doses of two and a half to three grams, that is thirty to forty-five grains have frequently been borne without damage. Cardiac patients are especially sensitive"—Was that the passage to which you referred and do you recall that as being a correct translation?

A. The latter part I referred to and the first part may be correct but I would like to read it to verify it.

Q. Well, please take it and if there is any error in the translation, state it, and let it go into the record in that connection as an explanation of your statement

The Court: What does this contradict that Dr. Wesener has stated?

Mr. Miller: I did not mean to say that it was a contradiction?

The Court: How is it admissible then under my ruling as to introducing authors? I do not see that it is competent.

Mr. Miller: Well, a part of the text—a part of the statement, your Honor, in which he said that thirty to forty grains might be taken is this—

The Court (Interrupting): Does that contradict this witness?

Mr. Miller: I think it does. He was asked how much a person could take or how much would produce the effects, and he said patients had been known to take thirty to forty-five grains, and I asked for a citation and he gave Gademer as a part of the sentence—he gave the minimum and the maximum dose.

The Court: He was not asked about that.

Mr. Miller: I want to ask it now.

The Court: I will not allow the question to be asked merely for the purpose of introducing the textbook.

Mr. Miller: I do not wish to ask it for the purpose of contradiction but merely in explanation.

The Court: It is a matter in chief to prove what the maximum dose is; that is a matter in chief and you cannot prove it by the textbook—

Mr. Miller: I did not have the German text before me and I had no way of asking the Doctor in that same connection if the same author did not state as a part of the same sentence what the minimum dose was and what the maximum dose was. He gave me the maximum dose.

The Court: You ask him something about thirty-five or forty grains the other day and he made the statement and referred to this author and if this author contradicts him in any way, you can prove that a fact. This author's dissertation on caffeine is not admissible.

Mr. Miller: I simply refer to this text that symptoms of caffeine poisoning may appear after three-tenths of a gram—is contradictory of the fact that a person may take forty-five grains without harm.

The Court: I believe he said that they took thirty-five grains with harm.

Mr. Miller: No.

The Court: You just get the passage you refer to and let me have it and then I will rule on it later.

Mr. Miller: I would like to have Doctor Wesener say whether or not this is correct, and I will then pass it to your Honor.

The Court: I want to get at the original examination upon which you are now seeking to introduce this text.

Mr. Miller: I will have to send to our room for that and I will do that during the recess hour.

The Court: Then the Doctor may be excused until he is recalled.

Mr. Miller: That letter to which his attention was called, but which I see from the reading of the testimony I did not put in evidence, I desire to offer in evidence as Exhibit No. 1 and I will pass it to the stenographer.

Mr. Sizer: You asked him about the letter.

Mr. Miller: He said that was a copy of the letter.

The Witness: As well as I could remember.

Mr. Miller: That is the published letter in the advertisement?

The Witness: I said I believed that was a correct copy of it.

Mr. Miller: You can doubtless verify that in the meantime. I have not the copy of the letter with me.

BY MR. MILLER:

Q. Did you state the other day that that was a copy of a letter which was published without your authority by the Coca Cola company?

A. The letter which I sent to them at that time was printed without my authority. I do not know whether

that is an exact copy of that letter. It appears to me.

Mr. Miller: I will give the Coca Cola Company notice now to produce that letter in open court that was written to it, and if we have formal evidence about it,I serve notice on them.

Mr. Sizer: Then we will get it if we can find it. The point I am getting at, Mr. Miller has a copy of a certain purported letter that it is claimed Dr. Wesener wrote, and he was questioning him at the time about a typewritten copy and not that.

The Court: You are mistaken about that. He asked him about this particular letter and had that in his hand when he asked the question.

Mr. Miller: I have also what purports to be a typewritten copy and I am perfectly willing to use it instead of that.

Mr. Sizer: I do not know what else there may be in that letter there.

Mr. Miller: Nothing except the Coca Cola advertisement, is all. I can give you a typewritten copy of it.

Mr. Sizer: Then if there is nothing else in it, I will have no objection.

The Court: If the objection is withdrawn it may go in.

Mr. Sizer: I assume that is a correct copy as far as we know. We will look it over and unless we desire to produce the original that may be taken as filed.

The Court: It may be filed subject to any exception that counsel desire to make to it hereafter.

(Which said letter so offered and received in evidence, was marked Exhibit 1 Wesener, and, omitting advertisement on same sheet, is as follows:)

"THE COLUMBUS LABORATORIES' ANALYSIS OF COCA-COLA. Chicago, April 15, 1907.

We beg leave to report to you the result of analysis of Coca-Cola. We purchased in the open market an original package of one gallon of Coca-Cola. The contents of this jug were submitted to a very careful and exhaustive analysis for cocaine and alcohol, and we failed to find any trace of either. Caffein was found to the extent of .2 of one per cent. The amount of caffein contained in one ounce of Coca-Cola used for making one glass of the prepared drink is less than one-half that is contained in a cup of coffee of the average strength.

Very respectfully submitted,
THE COLUMBUS LABORATORIES,
Per J. A. Wesener."

(Witness excused.)

Mr. Miller: Here is this Dr. Roberts letter that was put in evidence yesterday:

(Exhibit to testimony of Dr. S. R. Roberts.)

"Submitted to your good judgment without comment.

Atlanta, Ga., September 9, 1907.

Judge John S. Candler,

City.

Dear Sir:—On examination of the active principles of tea, coffee and Coca Cola, we find that tea contains from 2.33 to 3.24 per cent caffeine and from 16.40 to 27.14 per cent of tannic acid.

Coffee contains from .62 of 1 per cent to 1.11 per cent of caffeine and also tannic acid in smaller quantities than found in tea. The average cup of coffee contains about 2 grains of caffeine, though in "drip" coffee, which is more and more coming into use, a cup is likely to contain as much as 3 to 3½ grains of caffeine.

Therefore, a person drinking a cup of coffee is likely to get from 2 to 3 grains of caffeine, the more cupfuls one drinks, the more caffeine in proportion.

Coca Cola contains 1.22 grains of caffeine per ounce of the syrup which means per glass of Coca Cola as 1 ounce of syrup is used in making a glass of the beverage. The pure Coca Cola syrup, therefore, contains .25 of 1 per cent caffeine, and since there are six ounces of water added to this one ounce of pure Coca Cola syrup, to make the seven ounces of fluid found in a glass of Coca Cola, we find that a single glass of Coca Cola contains, in round numbers, about .04 of 1 per cent caffeine.

Comparing this amount of caffeine with the amount found in a cup of coffee or tea, we find that in a glass of Coca Cola there is just about one-third the amount of caffeine to be found in the other two beverages menticned.

But we cannot stop there with a mere comparison of the amount of caffeine found in Coca Cola, and that found in coffee and tea. We must go further, and take into consideration the custom of tea and coffee drinkers. For instance, a person rarely drinks more than one glass of Coca Cola at a time. This may be repeated during the day, but the rule is, that one glass of Coca Cola at a time is sufficient. The case is very different with tea and coffee drinkers. It is a frequent expression from the most nervous and delicate women that they drink from two to three cups of coffee at a meal, and in warm weather, tea drinkers usually drink from two to three glasses of tea at a meal.

As a rule, the caffeine in these beverages does not interfere with digestion, no matter in what quantities they

are consumed. Coca-Cola, therefore, does not interfere with digestion nor cause indigestion. Tea and coffee on the other hand, with their large proportion of tannic acid, do interfere with digestion, when drunk in either large or small quantities, during long periods of time. Tannic acid is an astringent, precipitating the pepsin in the gastric juice, interferes with peristalsis, and, in the long run, will cause constipation and its attendant evils.

Caffeine in medical doses, which range from 2 to 5 grains or in minute doses, as, for instance, a glass of Coca Cola, has no effect whatever upon the digestive system or ailmentary canal.

Caffeine acts upon the human mechanism in three ways: First, it stimulates the heart; increases the force of the heart beat, and raises the blood pressure.

Second. It stimulates the kidneys; increases their secreting power, and, therefore, may be considered, in medicinal doses, as a very mild diuretic.

Third. Caffeine is a cerebro-spinal stimulant, and physiologically, in the human mechanism, temporarily increases the ability to do work, chiefly on account of its action on the central nervous system. This influence is a temporary one, and does not noticeably increase the power to do work, except when the body has a plentiful supply of nutritious food.

Caffeine, in the small amount found in Coca Cola, could not be considered a strong stimulant, but merely a mild one, and by its slightly stimulating effect upon the nervous system, it refreshes the mind, causes more animation, and thus, physiologically, tends to relieve, temporarily, fatigue and mental exhaustion.

To sum up, coffee and tea, on account of the large amount of tannic acid and volatile oils which they contain, tend, in the long run, to interfere with digestion, and the large amount of caffeine which they contain renders the more harmful if drunk to excess: On the other hand, Coca Cola does not contain any substance which can, in any way, interfere with the digestive system; while the small amount of caffeine contained slightly stimulates the heart and nervous system and refreshes the whole mechanism.

Yours very truly,

(Signed) STEWART R. ROBERTS, M. D., M. Se., Ex-Prof. Biology in Emory College; Prof. Physiology in Atltana School of Medicine."

Mr. Sizer: We will call Dr. Hare around to the stand.

DR. HOBART AMORY HARE,

the next witness called on behalf of the Claimant and In-

tervenor, The Coca Cola Company, of lawful age, being duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. SIZER:

Q. Please state your full name.

A. Hobart Amory Hare.

Q. Where do you life and what is your profession?

A. I live in Philadelphia and am a physician. My profession is that of a physician.

Q. You live at Philadelphia, Pennsylvania?

A. Yes, sir.

Q. Doctor, please state your medical training and where you graduated.

A. I graduated at the Medical Department of the University of Pennsylvania in 1884, taking the degree of M. D.; also taking from the University of Pennsylvania the degree of Bachelor of Science. In 1886 I studied under Karl Ludwig in the Physiological University of Leipsic, and under Hugo Kronicker of the University of Berne in Switzerland.

In 1886 I studied in the Brunton Hospital for Diseases of the Chest in London. In the great Ormande Hospital for the Disease of Children, and in the National Hospital for the Paralyzed and Epileptic in London.

Q. Have you had any connection with any medical institutions of learning?

A. Immediately after graduation from the University of Pennsylvania, I was appointed an instructor in Clinical Diagnosis and later lecturer on Physiology in the Biological Department of the University of Pennsylvania.

In 1886 I was made demonstrator of experimental therapeutics in the same institution. In 1890, after having been in charge of the Department of Children's Diseases in the University Hospital for several years, I was made Clinical Professor of Diseases of Children in the University of Pennsylvania, and in 1891 I was made Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia which is the largest medical school in the United States, and I still hold that position.

Q. Have you held any official positions of any kind, and if so, what?

A. I have been physician to St. Agnes' Hospital, Philadelphia, and for the last twenty years have been physician to the Jefferson College Hospital, Philadelphia. I am a member of the American Reserve Corps of the United States Army. I have been president of the Philadelphia Neurological Society—that is, the society for the study

of nervous diseases.

I have been chairman of the section on medicine of the American Medical Association; that was in 1893, and I am now one of the vice-presidents of the Philadelphia Pathological Society for the study of diseases and diseased organs.

Q. Of what societies are you a member?

A. I am one of the original members of the American Physiological Society; I am a member of the Association of American Physicians which is limited to 125 members. I am a corresponding member of the Society of Hygiene in Madrid, Spain; I am a member of the various local medical societies in Philadelphia; I am one of the council of the College of Physicians of Philadelphia, which is a honorary body, not a teaching body.

Q. Have you written any medical treaties or essays along these lines?

A. A number.

Q. State some of them.

A. In 1890, I published a text book on Threapeutics, now in its 13th edition; in 1896, I published a text book on Diagnosis, now in its 6th edition; in 1904, I published a book on the Practice of Medicine which is now in its 2nd edition; in 1890, I edited an Encyclopedia on Therapeutics, three volumes, and have done that three times since then. They have not been new editions because the authors on the subject have been different. The last encyclopedia, the 2nd volume, was published in January of this year.

Q. Now, in addition to those books, have you written or prepared any essays along special lines of research?

A. In 1884, I wrote an essay on the Influence of Quinine on the Blood, and I received the Faculty Prize of the University of Pennsylvania for it; in 1885, I wrote one upon Physiological and Pathelogical Effects of Tobacco, which received the prize at the Rhode Island Medical Society; in 1886, the same Society awarded me the prize on an essay on New and Later Forms of Disease Due to Advances in Civilization; in 1888, I received the Father Gideon Gold Medal Prize from the Medical Society of London for an essay upon Diseases of the Chest; in 1889 I received the six thousand franc Prize for the Royal Society of Belgium for an essay on Epilepsy; in 1889, I received the Warren Triennial Prize of the Massachusetts General Hospital for an essay; also the Cartwright Prize of the College of Physicians and Surgeons of New York; and in 1890 the Boylson Prize from Harvard for an essay on Anti-pyrotic Drugs, that is, those employed to combat

fevers.

Q. Are any of those books used as text books?

A. Yes, sir; the book on Therapeutics is used as a text book in 88 schools in this country.

Q. Have you written any essay or anything especially dealing with drugs and the effect of drugs?

A. My book on Therapeutics essentially deals with drugs and the effects of them, and I am also one of the authors of the National Standard Dispensatory, Doctor Caspari being the senior and Doctor Rusby the other two members, and at various times I have made communications to various medical journals dealing almost all of them with the action of drugs on animals and the action of drugs on human beings.

Q. Have you made any study of Toxicology?

A. In the sense of the influence of poisons upon living persons, yes, but in the sense of a toxicologist expert, toxicological chemistry, no. I testified as an expert in a great many poison cases, notably the Patrick case in New York.

The Court: That is immaterial.

Q. Have you had any thing to do with the compilation of the United States Pharmacopœia?

A. I was the Secretary of the convention for the revision of the Pharmacopœia in 1890, and I was a member of the committee of revision of the Pharmacopœia which is now in force under the law, and I was Chairman of the committee on dosage of the present Pharmacopœia.

Q. Were you asked to testify in this case on behalf of the Government?

A. I was.

Mr. Miller: I object to that.

Mr. Sizer: That is simply matter going to show the estimation in which he is held by the Government.

The Court: I think it is competent.

BY MR. SIZER:

Q. For what reason did you decline to accept the appointment?

Mr. Miller: I object to that.

The Court: I hold that is immaterial.

BY MR. SIZER:

Q. Was your declination to accept the employment based to any extent on any question of compensation?

Mr. Miller: I object to that.

The Court: I hold that it is immaterial.

BY MR. SIZER:

Q. What is caffeine?

A. It is an alkaloid derived from coffee and also under the United States Pharmacopœia from tea. The drug, caffeine, found in the drug stores, is caffeine derived from tea and not from coffee, because it is too expensive to get from coffee.

Q. What are the effects of caffeine?

A. It acts as a stimulant on the body.

Q. What degree of stimulation is produced?

A. Mild stimulation.

Q. Does it produce a degree of stimulation taken in the form of a beverage that is injurious to the general health of a person taking it?

A. Not in the slightest degree.

Q. You say you are in part responsible for the dose as given in the United States Pharmacopœia; what is the dose of caffeine prescribed there?

A. One grain, but that is not the dose I voted for, although I was Chairman of the Committee; I believed that the dose should be larger, and in my own book, I give from two to four grains, but as the matter went through, the Committee they concluded that one grain was the best average dose. The doses of the Pharmacopœia are supposed to be the average doses.

Q. What bearing would the dose fixed in the Pharmacopœia have on a man—how much caffeine could be taken in a day in the nature of beverages?

A. Very little effect. Caffeine, as a drug, is very fleeting in its influence; therefore it is one, which when used in medicine, should be given comparatively frequently, every three or four hours, and therefore, if given every three or four hours, the patient would get from six to eight grains a day at the Pharmacopœia dose of one grain.

Q. What is the Pharmacopœia dose as prescribed in other countries?

A. It ranges from five to twenty grains. In France, Germany and Russia, I think it is that. I am not sure on Germany, but I think it is so in that country.

Q. Do you use caffeine-containing beverages or caffeine itself?

A. I have used caffeine very largely in the past. When I was a cowboy in the far West many years ago, I used it. I do not use it now because it makes me bilious. I use tea constantly and use caffeine every day.

Q. You state coffee makes you bilious?

A. The empyreumatic oil, or caffeol I think is what does it, because I find that I can take any quantity of caffeine in reason without producing those symptoms of

biliousness, and I find that if I drink coffee as a beverage or chew the coffee berries put up by Merck & Company in the form of decaffeinized coffee, which contains the empyreumatic oil, that I still suffer with the biliousness. Furthermore, I can drink tea without developing the symptoms. The tea does not contain the empyreumatic oil.

Q. Are there people who can drink one form of caffeine-containing beverages and cannot take another; for instance, can people drink tea and not coffee and vice versa?

A. Yes, sir.

Q. And that is due to what?

A. In the case of those who can drink tea and cannot drink coffee, it is due to the presence of the empyreumatic oil. In the case of those who can drink coffee and cannot drink tea, it is due to the presence of the tannic acid in the tea which produces disorders of the digestion.

Q. How much caffeine do you take per day?

A. From one to four grains.

Q. Did you ever drink Coca Cola?

A. I did. Finding that taking of caffeine in the form of a tablet and allowing it to dissolve in my mouth was not an agreeable way of taking it, and hearing of Coca Cola or having Coca Cola called to my attention, I got some of it and drank it regularly immediately after breakfast for a period of six months before going into my consulting room in place of a cup of coffee, or some other stimulant, and I have occasionally taken a glass of Coca Cola since. The reason I stopped taking Coca Cola after having taken it for some time, I found the sweet character of the Coca Cola was rather tiresome.

Q. How much did you take in that six months?

A. Any where from one to four glasses a day.

Q. Did it produce any injurious effect upon your health?

A. Not the slightest degree; I gained twelve pounds while I was taking it.

Q. Do you use caffeine in your practice as a physician?

A. Very constantly.

Q. For what purpose is it used as a medicine?

A. As a stimulant to the general nervous system in cases of depression, to improve the action of the heart in persons who are over-fatigued, played out, to increase the activity of the kidneys when the urinary secretion is not as free as it should be, to relieve certain types of headaches and eye-strain. That is about all that occurs to me at the moment.

Q. Is caffeine a poison?

A. Not at all.

Q. Does it have any permanent effects?

A. Not in the slightest.

Q. How long would it take the effect of even excessive quantities of caffeine to pass away?

A. Of course, the term "excessive quantities" of caffeine is a very wide one. If you mean the effect produced by five or six times the ordinary dose, I should say four or five hours, differing in different individuals and differing too, according to what the individual was doing in the five or six hours after taking it.

Q. On what do you base the statement that caffeine is not a poison?

A. In the first place, I have administered it in very large doses without seeing that it produced any symptoms that would justify any one classing it as a poison. I have taken it myself in several times the dose ordinarily indicated as correct in English and American text books without being poisoned, and I cannot find any cases in the literature which would justify such a classification. It is true that a number of instances have been quoted in this Court where caffeine has been said to have acted as a poison, or to have produced death. In not one case that I have been able to find where death followed the use of caffeine, was there any proof whatever that caffeine caused the death, and there was abundant evidence that there were three or four other likely causes of death. In the case of poisoning which did not go to the point of death, the doses were either very, very large or they were poorly reported; and the fact that caffeine is found in certain books classed under the head of poisons or with many substances which are ordinarily known as poisons, is of no particular significance. To illustrate what I mean, if you look in the United States census, you will find that chickenpox is classed under infectious diseases with consumption and pneumonia. You will find two hundred thousand deaths from pneumonia and one or two from chickenpox, and if you investigate the cases where the death was reported from chickenpox, you will find they occurred in children so near death by reason of other diseases that anything would have sent them off, and that is the way with caffeine when it is quoted as a poison in certain books, in connection with other substances which are poisonous.

Q. Is the use of caffeine as a stimulant, followed by depression?

A. It is not.

Q. Is caffeine a habit-forming substance?

A. Never.

Q. Does it have any cumulative effect?

A. Not in the slightest degree.

Q. Did you hear the testimony of Doctor Wood the other day with respect to a certain experiment he had made with caffeine?

A. Yes, sir.

Q. Now, from the standpoint of a physician, what conclusions do you draw from those experiments?

A. The conclusion that caffeine increases the muscular ability to work without producing any secondary depression, and without in any imparing what has sometimes been called the reserve energy of the muscles. In other words, it has very much the same effect upon the efficiency of muscles as oiling machinery has upon the efficiency of the machinery. It enables them to expend their energy with less effort.

Q. Did you have any connection with the making of the experiments testified to by Dr. Hollingworth the other day?

A. I did. I planned the scope of those experiments and during their performance, investigated the results that he was obtaining and made further suggestions and improvements in the method.

Q. What conclusions do you, as a practicing physician, draw from those experiments of Doctor Hollingworth?

A. Identical conclusions to those I have just spoken of concerning Doctor Wood's experiment except that his deals with mental processes and Dr. Wood's dealt with muscular.

Q. What is the effect of caffeine on blood pressure?

A. That is a matter still open to debate. In my own book, I state that caffeine raises the blood pressure. The text of that book was prepared in the latter part of 1908, and a number of researches have been published since then and many of them before that, which contradict that view, and I think that is still cloudy. I do not think it is determined. My opinion that it is not determined is verified by the fact that in the March issue of the Edinburg Journal, Professor Gibson of Edinburg —

The Court: That is not competent and I exclude that.

Q. Does caffeine ever produce ateriosclerosis?

A. I don't think so.

Q. What do you mean by the word "tolerant" used in a medical sense in connection with the taking of various substances?

A. The ability of an individual to take a substance which is capable of producing effects. In other words, a

substance which is not absolutely powerless, with comparatively little manifestations of its influence.

Q. What do you say, Doctor, with respect to the tolerance of the human system for substances like caffeine?

A. I think the longer it is taken the more it is tolerated.

Q. And so a person accustomed to it is really able to take more without any effect than one who is not accustomed to it?

A. Yes, sir; that is the rule in regard to practically all of the alkaloidal drugs.

Q. Doctor, assuming that caffeine is present in Coca Cola syrup to the extent of about .21 of one per cent and that one ounce of syrup contains this per cent of caffeine, mixed with six or seven ounces of water, and in that form taken as a beverage, what would be the effect of the caffeine contained in this beverage upon the human system?

A. A pleasant, refreshing influence.

Q. Is that the only effect it would have?

A. It might increase somewhat the flow of urine. That would depend very largely, however, upon how much fluid a man had in his body at the time he took it, and how much exercise he was taking.

Q. Is the increase in the flow of urine following the taking of beverages injurious to the system?

A. I can't understand how it could possibly be so, and it might be very advantageous, and with the average individual, sedentary individual, it is very advantageous.

Q. What do you say with respect to the value of experiments made on animals with the use of caffeine as indicating the effects of caffeine taken in the form of beverages on the human system?

A. Experiments on animals are indicative of what possibly may occur with the same substance as given to man, but only collaterally so. And the great difficulty in the administration of the influence of a drug like caffeine upon the human being, by administering that drug to a rabbit or a guinea pig or to a frog are that none of those animals are omnivorous, that is to say, eat everything as man does. In the case of the rabbit and the guinea pig, they are vegetarians, and their processes of nutrition and digestion are limited therefore, to dealing with vegetable substances of which, of course, caffeine is one, but man's organism is built to handle meat and vegetables of all kinds, and therefore there is no animal which affords a true and accurate representation of what a drug may do unless it be the pig, which is also omnivorous.

Mr. Sizer: You may cross-examine him.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Doctor, who was it approached you on behalf of the Government and asked you to testify?

A. Doctor Kebler.

Q. Who sits by my side?

A. Yes, sir.

Q. Well, you prepared an opinion for the Coca Cola Company in this case, especially after this litigation was brought, did you not, Doctor Hare?

A. The only reason I hesitate in answering that question is because I think I prepared several opinions.

Q. Would you recognize some of the statements in that opinion if it should be read to you?

A. Yes, sir; sure.

Q. Well, in that opinion, did you deal with coffee to start with?

A. Well —

Q. (Interrupting.) And its effects on the human system?

A. I am unable to answer that question because I don't know which opinion you refer to, but I think it likely I did.

Q. I mean in one opinion that you prepared for the Coca Cola Company you did?

A. Yes, sir.

The Court: I suggest, as I did in the case of the other side, that if you want to contradict a witness, just ask him if certain things are so, and if he says that he didn't make that statement, that would not be competent.

BY MR. MILLER:

Q. State whether or not as coffee was dealt with in that case, you were considering it from the caffeine standpoint, that is from the standpoint of the caffeine content?

A. Well, Mr. Miller, I can't answer that question without seeing it, because I repeatedly sent replies to Mr. Hirsch to questions, which he addressed to me, and I don't know which one we are talking about at the the present moment. I am perfectly free to state that I believe caffeine is a most important constituent of coffee. If that statement is there, I will make it now, if I didn't make it before.

Q. The statement I have does not purport to be the original. Of course, I would have to give counsel on the other side notice to produce the original, but I read this statement —

The Court: I hold it is incompetent unless there is

some reason in reading it.

Mr. Miller: I am trying to ascertain what is was, what was the particular constituent of the coffee.

The Court: Just hand the opinion to the witness and let him see if it is the original.

Mr. Miller: I will pass this to the witness and ask him if he wrote this opinion, a copy of which I pass to him.

The Court: Well?

Mr. Miller: He said he thought he would recognize it if extracts were read to him.

The Court: I hold it is incompetent and that it is not proper for the purpose of contradiction.

Mr. Miller: I have not tried to contradict him about this, I had not got to that point yet.

The Court: Proof of former statements is incompetent in contradiction. If it is not used to contradict the witness, it is new matter that you are cross-examining on.

The Witness: This is a series of extracts from various books and in quotation marks, and does not seem to represent what I individually say unless I could take time to read it all through to be sure.

BY MR. MILLER:

Q. State whether or not that is the opinion that you prepared in which you embodied certain extracts taken from medical authors for the benefit of the Coca Cola Company for use in this case.

Mr. Sizer: Just let him state where they got that.

Mr. Miller: Just let the witness compare it and see.

The Court: I do not see the bearing of it unless you specifically want to show that this witness has sent reports to the Coca Cola Company.

Mr. Miller: I am asking him that.

The Witness: I admit that.

BY MR. MILLER:

Q. I ask you whether or not in dealing with caffeine in that particular opinion, or in dealing with coffee, rather, in that particular opinion, a copy of which you have before you, the physicological action of the coffee, you had regard to its caffeine content?

A. Well, I had no regard—because this is a quotation. I am very free to admit that this is a quotation, but these are not my words.

Q. But does not that, Doctor, I say, so far as you have examined it, appear to you as a correct transcript of one of the opinions that you sent to the Coca Cola Com-

pany?

A. I remember taking a number of books and amonst other, the National Dispensatory of which I am one of the editors, taking quotation from them and sending to Mr. Hirsch, extracts from these books which I believed had a direct bearing favorable and unfavorable upon this whole subject. Now, whether this is an absolute transcript of what I sent him, I cannot remember.

Q. Now, turn to the back of that—just look at the back and at the introductory part and also at the closing sentence, and see if that is not in your own language, the beginning of it.

A. On the first page, it begins: "Opinion by Dr. Hobart A Hare," and the next word is a quotation. The begining of the sentence begins with quotation marks, that is quotation marks from "Pleadings in the case."

Q. Yes.

A. And the reply then follows.

Q. Now, turn to the conclusion or the summary and state if you yourself did not after going through the literature, draw certain conclusions from those previous excerpts?

A. "It is evident, therefore,"—

The Court: Don't read it, Doctor.

BY MR. MILLER:

Q. I ask you whether or not you did, in the opinion you sent to Mr. Hirsch, draw certain conclusions from the literature that you had quoted in that opinion? Do you recall how that was?

A. This is my opinion now and has been right along; I don't know whether these are my original words or not —

Q. (Interrupting.) Now, as respects coffee, didn't you say and is this not true "That" —

The Court: (Interrupting.) That is incompetent under the rule, what he has previously stated, unless the basis for contradiction of something he has said on direct examination. His former statements are entirely immaterial to this case.

Mr. Miller: It has been shown here as to the large consumption of coffee and I will ask this witness, if I am permitted to ask him on cross-examination, I will ask you as a matter of fact that the large consumption of coffee depends upon its pleasant taste when it is roasted and is due to the fact that the caffeine which it contains acts as a gentle stimulant?

A. That is strictly true.

Q. Now as respects the toxicology of caffeine. Didn't you report and isn't it true that a case of caffeine is reported by one Routh?

A. I know the man.

Q. Well, you know the case?

A. I know the case and I have the reference in my room, but I have gone over these cases that have been offered here in the Court and listening to the testimony so frequently, I will have to admit which Routh case it was.

Q. When you prepared the opinion that was to be followed—did you use this language: "The only case of poisoning by caffeine that we have met with, is one reported by Routh, see London Lancet 1883"?

A. Yes, sir, that was the case. I also think it was quoted in Martindale & Prescott's extra Pharmacopœia. I think I am wrong on that reference; I can't remember that.

Q. You think that reference is wrong?

A. I mean to say I am not certain which Routh case was reported in the Martindale & Prescott extra Pharmacopœia.

Q. Now, isn't it true that coffee has been taken for the purpose of producing abortion?

A. Yes, so has everything else.

Q. Well, what about bread?

A. I don't know whether bread has —

Q. Then you are mistaken in your statement that everything else has.

A. And air has been pumped into the uterus for that purpose which is pretty near as simple as bread, and by the by, a certain form of bread made with rye flour, in which is used ergot, will produce abortion.

Q. I object to the injection of ergot, that is entirely foreign to this controversy.

Mr. Sizer: He asked him if it ever did, and he said rye bread containing ergot —

Mr. Miller: (Interrupting.) He said rye bread and ergot.

The Court: Ergot would be known as a drug.

BY MR. MILLER:

Q. Now, didn't you report and isn't it true that the depressant action of the heart after the administration of doses of caffeine has a depressant reflex stimulant action and inhibitory control of the heart, and last there follows rapid, feeble heart beat which gradually increases until contraction ceases?

A. That is not my statement, it must be a quotation

from some book.

Q. Well, it is a quotation from Buck, you quoted that.

A. I think so, but I didn't conclude that the quotation from Buck is true. A man by the name of Buck edited the Encyclopædia of Medicine which is known as Buck's Encyclopedia, and some other medical men than Buck whose name slips my mind now, wrote all the articles on therapeutics in that Encyclopedia.

Q. And that was a primary action you were describing of caffeine in your opinion to the Coca Cola Company?

A. Not in my opinion. I sent him all the literature I could find. I sent Mr. Hirsch all the literature I could find favorable or unfavorable, to caffeine.

The Court: If that is not your opinion, I will exclude that. You reading parts of that before the jury, Mr. Miller, and if he is quoting authors there, don't read from the authors.

BY MR. MILLER:

Q. In the opinion that you gave to Mr. Hirsch, did you state that your opinion, I mean, with your opinion, did you quote references that were both favorable and unfavorable?

A. Well, I don't know whether I made that statement in that particular paper, but I repeatedly in conference with Mr. Hirsch and probably in letters, told him that I believed it was wise to find everything against his side as well as everything for it, and I would report everything.

Q. As a matter of fact, you did not report the Zenetz cases and Allard cases and Bullard cases in here at all.

A. No, sir; I did not because they are not truthful cases.

Q. Not truthful what?

A. Not truthful cases.

Q. Then you regard this case as reported by Buck as a truthful case or else you would not have reported it?

A. No, sir; I don't know anything about Buck's case, I did not report his case. He does not give any details —

Q. (Interrupting.) If you undertood only to report the truthful cases, how can you say then these were not truthful cases when they were reported in your opinion?

A. I didn't say no such a thing—that is putting words in my mouth, unless I misunderstood your question.

Q. I ask you again whether you reported the case reported by Buck in quotations and if you did not give it as being official and reliable?

A. I did not consider that quotation from Buck as official and reliable because it states that there is a case, but no details of the case are given which enables one to

judge concerning it.

Q. Well, do you regard that book as reliable and standard authority?

A. I have already said that Buck did not write that, another man wrote it who was comparatively unknown.

Mr. Sizer: We object to that.

The Court: I exclude that.

Mr. Miller: I am not asking—I am just asking him about how Buck stands as an authority.

The Witness: Buck don't stand at all as an authority.

BY MR. MILLER:

Q. Then, why did you quote from Buck in your opinion to Mr. Hirsch?

A. I told Mr. Hirsch I was going to submit everything to him I could find in regard to the matter, both favorable and unfavorable.

Q. But in that same connection, you also stated you did not submit the Zenetz and the Allard cases which you knew of in that connection—I want to know why —

The Court: (Interrupting.) That has been gone into.

BY MR. MILLER:

Q. Why you would submit the Buck cases and not those of Zenetz and Allard?

The Court: That has been answered sufficiently by the witness.

BY MR. MILLER:

Q. What are meant by medicinal doses of caffeine, Doctor?

A. Doses such as are given by physicians to patients who, by reason of their condition of health require medicine to better them.

Q. And did you not state in your work that you wrote on Practical Therapeutics that the empyreumatic oil of coffee of which there is about one-half to one teaspoonful in each well-made breakfast cup, has no physiological effect?

Mr. Sizer: Refer to the page there.

Mr. Miller: I am referring to page 142.

The Witness: I remember that statement very well.

BY MR. MILLER:

Q. Is that true or not true.

A. And I find in my notes in regard to Routh in the Lancet 1883, volume 1, Page 680. The case was that of a man of 65 who had a weak heart and had taken 60 grains of citrate of caffeine, equal to thirty grains of caffeine and

vomited 45 minutes later. He had some nausea with the vomiting and some muscular weakness and some giddiness, his pulse was rapid, 120, and he had a cold clammy skin, no disturbance of consciousness, and further Routh says that this is the only case on record of caffeine poisoning in a human being, and all those symptoms are much more characteristic of a man who has a weak heart than they are of a man who is poisoned or has been poisoned by caffeine.

Q. Now, if all that has come to light why didn't you state that in conection with the Routh case when you were writing the opinion?

A. Because I imagine when I wrote that opinion that I had not looked up all the details of the Routh case.

Q. Now let us get back to this empyreumatic oil statement, and I ask you again if you did not make the statement credited to you about empyreumatic oil on page 142 of your book?

A. I remember the statement without looking at the book and I will explain it.

Q. Is it literally correct as I read it?

The Court: Did you state it?

The Witness: I did state it, yes. May I explain now?

The Court: Yes, but counsel first wanted an answer to his question and you may now explain it.

A. About twenty years ago, Dr. John Marshall and myself made an investigation of this empyreumatic oil of coffee, he preparing the empyreumatic oil and I studying its effect on animals. We published our results. A year or two later Dr. E. T. Reichert, the professor of Physiology in the University of Pennsylvania, distilled some of this oil and made experiments and came to conclusions which were not in accord with our own, and which seemed to prove that the effect produced in my experiments were more due to the fact that this substance was an oil than that it possessed any inherent properties of its own, and that was the reason that I put in this statement in the book concerning empyreumatic oil. I considered that Doctor Reichert's work, bringing up the question of the action of the oil as an oil, was probably better than my own and that I might have overlooked that matter but I am inclined to change my opinion because I am looking into his methods and those of Doctor Marshall and I think Reichert's methods were not as good as Doctor Marshall's and therefore the chances are that there is a larger factor of error in his work than in mine.

Q. That book was published in 1909?

A. The thirteenth edition.

Q. You have changed your opinion since then?

A. No, sir; I have not changed my opinion since then. I think another research will have to be made to determine the physiological action of empyreumatic oil.

Q. Now, as to the physiological action of caffeine on the nervous system, on page 142 I find, speaking of the nervous system:

> "Caffeine acts as a rapidly acting stimulant, exerting its chief influence on the brain and spinal chord."

A. There is no question about that.

Q. "By its cerebral effect it causes increased rapidity of thought and by its influence on the spinal cord is causes reflex activity."

A. I think I say "increased reflex activity."

Q. "And it increases the reflex activity."

A. That is right; I thought you had left out that word.

Q. "And for that reason is said to make people nervous."

A. It is said to make people nervous. I do not say so; I say: "It is said."

Q. Now, if you did not subscribe to that view or if you held a contrary view, why didn't you say so in that connection?

A. I do not hold a contrary view. I am there stating that it is said to make people nervous. I do not find that it makes me nervous, but I would not consider that I was justified in writing a book which is supposed to present a fair summing up of common knowledge unless I paid respectful attention to the opinions of some other people.

Q. You were then dealing with the physiological effect of this drug and for the benefit of those practitioners who used your work?

A. Exactly.

Q. Now, if you held a contrary opinion to that, would not you have stated then and there?

A. If I had held a contrary opinion, yes. It is a matter of dose, however. I am entirely agreeable to the proposition that caffeine in some doses makes people nervous—large doses.

Q. Now, if you had had reference to large doses, would not you have said so right there?

A. I did not have reference to any dose. I put the word "nervous" there in quotation. The reason I put that word "nervous" in quotation marks is because I do not think "nervous" is the scientific term. "Nervous" is a term applied by people to express a state of mind or body

hich you might say that they are on "wire edge." not any more scientific in its description.

Do you regard Schmiedeberg as a standard auth- with respect to the toxicty or physiological action ffeine?

I do not know whether he is considered, all that ys as to caffeine, but I should say that Schmiedeberg the greatest living pharmacologist.

You would think he was a standard reputable auth- ?

Anything he said based on his own knowledge and quoted from other authorities, I would regard with reatest possible respect.

On page 97 of Schmiedeberg's book —

e Court: This witness did not express an opinion oisons based on authorities and I think that is in- etent. He gave his personal experience, the fact that were no cases reported in the literature and the that in his opinion the inclusion is certain books g poisons of caffeine, was not logical.

BY MR. MILLER:

Do you or not base your opinion on your reading e literature or do you base it entirely on your ex- nentation and observation?

My opinion as to what?

As to the effects of caffeine on the human system.

e Court: As to being non-poisonous.

I base my opinion as to its non-poisonous effects ersonal observation, and upon the fact that from a wide knowledge of literature, dealing with drugs, I always never found any instance reported in which ine had produced disagreeable effects, and that means only that I was thoroughly familiar with the stand- works but also means that during the last twenty s I have been the editor of the Therapeutic Gazette, onthly journal dealing with the effects of drugs, and ceive in exchange all the medical journals of the d, and it is my duty as editor to cull from those nals anything which I think will be of interest to the ession; and during all of those twenty years my gen- impression has been that nothing has appeared con- ing caffeine, although I know that these Zenetz cases appeared during that time and it is quite conceivable one or two or three may have slipped my observation. that is the general impression I have gotten from a y accurate observation of medical literature.

Your opinion was based on that knowledge ac-

quired in that way from the medical literature and from your observation and experience?

A. Yes, sir.

The Court: That opinion from literature is that there are no recorded cases of poisoning from caffeine, or do you mean that it is broader, that the scientific opinion is that it is not a poison? I thought I understood you at first but I have now some doubt.

The Witness: I mean that as the result of a fairly intimate knowledge with medical literature I am led to believe personally that caffeine is not correctly classed amongst the poisonous drugs,—and if you will pardon me, I forget the last part of your question, your Honor.

The Court: The point of inquiry was whether your opinion was based upon the opinion of authorities upon that question or based upon the recorded cases as a distinction. If your opinion is based simply upon recorded cases, that permits certain questions; if it is based upon the opinions of authorities from specific cases, another line of evidence would be competent. Now, what is your opinion based on?

The Witness: On both. In the first place, I have not found such cases; and in the second place, the cases reported are not reliable.

Mr. Miller: Then I can examine as to Schmiedeberg.

The Court: Your answer is contradictory; you say it is based on general literature and in the next place you qualify it by limiting it to the effect of recorded cases.

The Witness: I am sorry. I can put it in another way. If I should say that I have lived in Philadelphia many years and have never seen a man run over by a trolley car, I would state the result of my observation and personal experience, but I would have to say that reading the literature of the times I know that trolley car accidents occur. But in this particular instance, while I know that caffeine accidents have been reported, the method of reporting them and the description of the cases are such as to lead me to believe they were not caffeine.

The Court: The question is this: Is your opinion expressed upon examination in chief that caffeine is not a poison, based in whole or in part upon the opinion of toxicological authorities as distinguished from the question of recorded cases? That is, does it involve the assertion that the weight of the toxicological authorities—that is, of the opinions of authorities in that line—that it does not poison, as contradistinguished from the effect of the recorded cases on the subject?

The Witness: The difficulty in that matter is that the

authorities are divided in that most if not all of the English speaking authorities do not class it as a poison, and most if not all of the German and other authorities do class it as a poison.

The Court: Is your opinion that it is not a poison based upon the authoritive expression of opinion on that subject as distinguished from your own observation and your own reading of cases?

The Witness: It is based upon my own observation and my own reading of the cases.

The Court: That is what I understood originally.

BY MR. MILLER:

Q. Is it in part based on what medical authorities have said on the subject?

Mr. Sizer: That gets back to the same confusion because it does not distinguish between what other authorities have said with respect to specific cases and their opinions.

BY MR. MILLER:

Q. Well, then I will ask this question,—whether or not the opinion you have expressed here to-day has been based in whole or in part on the opinion expressed by medical writers and standard authorities as respects the action of caffeine as a toxic agent?

A. I have no intention of trying to dodge the question but I do not think any truthful man who has read anything can say his opinion is not tinctured to a certain extent by what he has read. You cannot live in the world without being influenced by the things you see and hear. Therefore I could not make oath and say that my opinion was not in any way based on something that someone has written. Unconsciously it is done by all of us all the time.

Mr. Miller: Now can I ask as to Schmiedeberg?

The Court: Do you put it in this way, Doctor: Does your expression of opinion that caffeine is not a poison intend to involve the assertion that that is the weight of authority on the subject?

The Witness: It is.

The Court: Then you may cross-examine on that.

BY MR. MILLER:

Q. Now, I ask you if Schmiedeberg does not say that from seven and a half to nine grains of caffeine may cause symptoms of intoxication—on page 97?

A. I have not the book but I will take your word for it.

Q. That is your recollection of what Schmiedeberg

does say?

A. I have no recollection but I am perfectly willing to admit he says it if you say so.

Q. By caffeine intoxication or symptoms of intoxication, what is meant?

A. Symptoms of its influence develop in a marked degree.

Q. Does not "increase of reflex irritability," as used by yourself, tend to make people more nervous?

A. Would you mind giving me a reference to that?

Q. I find it on page 142 where it says: "By its cerebral effect it causes increased rapidity of thought and by its influence on the spinal cord it causes increased reflex irritabiity."

A. No, sir. It says "activity."

Q. What is meant by "increased reflex activity" there?

A. It means if I make a pass at a man's face he winks faster if he has taken caffeine. If I hit his foot, it jerks away quicker if he has taken caffeine.

Q. That effects the muscles?

A. No, sir; the spinal cord and the nerves; indirectly, of course, it affects the muscles.

Q. In that same connection you state: "It is important to remember that it has no effect on the brain protoplasm except to stimulate and that ultimately the brain, driven along by caffeine, breaks down," —

A. Yes.

Q. —"by the concentration of its energy, for the time being in one effort."

A. Yes, sir.

Q. What is the result of the breaking down of a man's brain by the concentration of its energy in one effort?

A. Sleeplessness, wretchedness as to his mental state —that is to say, he may be depressed and miserable and irritable, if you like, down-on-his-luck, and perhaps not competent to do his ordinary daily mental task as well as possible, but you have misinterpreted the meaning of that sentence, if I gather the meaning of your question correctly.

Q. I read it literally.

A. Yes, but did not intrepret it right.

Q. I didn't give any interpretation; I asked you what you meant.

A. Then I will tell you.

Q. That is what I asked you.

A. In the first place I say it does not affect the brain protoplasm except to stimulate, which means it has no other effect except stimulating. And in the last sentence I say:

"Ultimately a brain driven by caffeine breaks down" etc. I do not mean that the man who takes caffeine every day breaks down if he gets his ordinary quantity of rest and sleep and food. In that connection I might say that a horse that was whipped and spurred and driven along would ultimately break down. Now, nobody would suppose that I meant if I put the whip and the spur to a horse every day in the week and gave him his food and ordinary rest in the stable that he would break down because I whipped and spurred him, and if I spoke of a horse that way they would understand that if a horse was driven along hour after hour, without proper food or rest, he would ultimately break down. And I wrote that with particular reference to medical students who frequently before coming to my examination room were in the habit of attempting to study for two days and two nights without any sleep whatever and by taking continually strong coffee, sometimes every hour to keep going. And those were the people who, when they got in my examination room, became, to use the phrase of the student, "rattled" when they missed a question.

Q. Do you mean to state by that that constant brain stimulation would not ultimately cause changes in the protoplasm of the brain?

A. It has not in my own case and in the last six years I have taken caffeine.

Q. Of course you do not know about that?

A. You can judge as well as I.

Q. I did not quite catch what your statement was as to the raising of the blood pressure. I find that you state that it certainly seems to raise the blood pressure in almost every instance in which it is used. What is your explanation of that sentence?

A. I am speaking there of its action in circulatory failure. I am not referring to a healthy person.

Q. You don't say that.

A. I don't say it but that is what I mean and I don't say anything which contradicts that meaning, and I have already explained that this is a matter which is still under debate medically and I have every reason to approve of that.

Q. You are treating of that under the sub-title of "Physiological Action?"

A. Yes, sir.

Q. Now, when you refer to physiological action and follow that by the circulation, do you mean to say that you were referring to sick people?

A. Of course, the general practice holds true that

that part of the text is dealing with the subject of the influence of caffeine on man and animals when administered experimentally to determine its influence in contradistinction to the second page where it speaks of therapeutics, but it is quite impossible in writing a book of this kind to sharply differentiate one from the other and there are many sentences all through the book under the head of "Physiological Action" which, perhaps more correctly from a very rigid rule, would be put under "Therapeutics."

Q. As a general rule, medical treatises first speak of the general physiological action where you had administered to well people, and then as you do on the following page, speak of it therapeutically?

A. That is very true, and that is one of the chief distinctions between my books and others, and that is the reason my book is in eighty-eight schools and the others are not, because I combine our knowledge of the influence on animals and of the influence on man and so make it more interesting.

Q. Then you think that the influence of the drug on animals has a considerable influence in determining its effect on man?

A. Yes—of some value.

Q. Now, referring to the untoward effects, on page 44 of your book, you say: "The writer has also seen a marked rise of temperature following its use in doses of two grains three times a day."

A. Yes.

Q. "But that is unusual."

A. Yes, sir.

Q. You were the writer of the book?

A. Sure.

Q. You have seen a marked rise in temperature following the administration of two grains?

A. Yes, sir.

Q. Now, a rise in temperature is what we have when we have various forms of fever?

A. Surely, but I say that is not usual, and I am reporting that with a deliberate purpose of emphasizing the fact that it is not usual. I am making that statement because if Doctor Brown of Oklahoma, who has not had much experience, by some odd chance had such a patient and wondered whether in the world anybody had ever seen such a thing before, he might be interested to find that I had seen it, but it is not common.

Q. You wrote that in the book for the benefit of Doctor Brown instead of writing him a letter?

A. Yes, sir; Doctor Brown is a suppositious person.

Q. Now, is it not true that caffeine often produces so much insomnia or sleeplessness when given in cases of cardiac disease that its use has to be discontinued?

A. Certainly, it is; but where I am talking of cardiac disease there I am talking about a man so sick from cardiac disease that he is in bed, and unable to get about and those people are peculiarly susceptible to caffeine or anything which acts as a stimulant or pick-me-up to the nervous system. Many cases of cardiac disease—heart disease,—sick enough to be in bed, have a tendency to be delirious, sometimes they even get up out of bed and throw themselves out of the window. Now, under such circumstances the use of caffeine might stimulate them and increase their fanciful delusions more than if they had not taken it.

Q. Is it true that the heart is that susceptible to the effects of caffeine?

A. No. A man does not get delirious of any influence on the heart, but because of the influence on the brain.

Q. And is it not true that its use, if persisted in, may produce a condition of delirium closely resembling that of alcoholism?

A. In those cases, yes.

Q. Is it true that in various persons the habitual use of coffee causes insomnia, tremors, palpitation and gastralgia and emaciation?

A. Of coffee, yes. It does in me. I have already testified that coffee does but caffeine does not with me.

Q. Did you ever make a careful experimental study on humans to determine if caffeine is or is not poisonous?

A. If you mean by that to inquire whether I have ever deliberately taken a human being and piled caffeine into him until I could find whether I could possibly hurt him by doing so, certainly not.

Q. The action of caffeine on animals is one of the most usual and ordinary means of information we have to determine the physiological action of the drug, is it not?

A. No, sir; I should say that caffeine is one of the drugs which lends itself least to giving us results in animal experimentation because its chief activities are connected with the mental processes which we have no accurate means of studying while they are going on as processes themselves. We have accurate means of studying the mental processes as presented by Professor Hollingsworth, but we cannot look at the brain and see it functionating, cannot see it changing under the influence of caffeine,—for instance, as we can look at the heart and

see it changing under digitalis. Therefore I would say that animal experimentation under caffeine was less productive of good results than many other drugs.

Q. I think that is true. Now, in preparing your opinion in this case for use of adversary counsel, didn't you especially call attention of them to the fact that the word "doses" was used in certain connection by certain medical authorities rather than "dose," although you add, "the author may mean one dose?"

A. I think it likely I did but I do not remember whether I made such a distinction, but it is quite a natural distinction to make.

Q. Do you state that the only contra-indication to the use of caffeine is acute in inflammation with reference to the kidneys?

A. Referring to my book?

Q. Referring to your opinion.

The Court: That is not competent. I think I am in error about that; you may ask that question.

Mr. Miller: Repeat that question.

(The question was read.)

A. If I am discussing kidney disease, I have stated that, yes.

BY MR. MILLER:

Q. And by contra-indication you mean —

A. — that it ought not to be given.

Q. In that same opinion don't you refer to caffeine as a drug?

The Court: That has been stated over and over again.

BY MR. MILLER:

Q. Don't you, as part of that opinion or as a part of the excerpts and opinion combined prepared for adverse counsel —

The Court: That is pretty wide.

BY MR. MILLER:

Q. Then don't you state in discussing the dosage of caffeine and in digesting the authorities on that point, that as the depressant action replaces the stimulant—referring to caffeine—the inhibitory control of the heart is less, and therefore a rapid and feeble heart beat which greatly increases until contraction ceases —

A. You read that once before and I said I didn't write it myself, but it was quoted.

The Court: And it should not go before the jury unless it is an opinion expressed by this witness.

Mr. Sizer: I move to exclude that because Mr. Miller

stated that the witness expressed that in his brief. It is not an opinion of the witness but a medical brief that he has written.

The Court: I exclude it. The witness states that he has stated opinions on both sides and it is not competent and ought not to go before the jury unless an opinion expressed by himself contradicting something he has stated.

Mr. Miller: I submit to your Honor whether or not I am entitled to it. Here is the heading of this article; I do not care to read it but I will submit it to your Honor and then after looking at it you can pass over it.

The Witness: I have read it aloud and I did not put that at the top of it.

BY MR. MILLER:

Q. You did not?

A. Certainly not. It is not my opinion.

The Court: The witness may be contradicted by any personal expression of opinion he has made contrary to what he has said here, but if a man writes an opinion and cites authorities on both sides, it is not fair or just to the witness to read one of those quotations of authority as contradiction of his opinion when he has stated his opin ion and given the authorities on both sides.

BY MR. MILLER:

Q. Now, did you use this language yourself in that connection —

The Court: Before reading it let him look at it and see.

BY MR. MILLER:

Q. All right. I refer, Doctor, to those three lines that precede certain things which I am about to read.

A. You mean the three lines enclosed in pencil?

Q. Yes.

A. You will pardon me, I have to take some time to read the preceding paragraph to see what I am saying. Now, your question is whether I wrote those three lines myself?

Q. Yes.

A. My recollection is that is my opinion and it is based upon the quotation.

The Court: That was not the question; it was whether you wrote it.

The Witness: I wrote it.

Mr. Miller: Now, I submit I can read it.

The Court: If it contradicts anything he has said, yes.

Mr. Miller: "In this denial as to the deleteriousness and injuriousness and in support of this view the following evi-

dence may be submitted." Now, I want to submit that evidence because that is the excerpt to which I refer.

The Court: He expresses an opinion denying the deleteriousness.

Mr. Miller: Yes, and he says: "In support of this view the following evidence may be submitted."

The Court: That is immaterial.

BY MR. MILLER:

Q. Then, if I understood you, are the authorities on which you base that opinion —

The Court: We will not go into the authorities. He has expressed the opinion that it is deleterious and he expresses it now, and that does not contradict his opinion.

Mr. Hirsch: I think it is only fair to Dr. Hare that it should be stated in there what he reported—he said he reported both the favorable and unfavorable.

The Witness: I gave not only the favorable but the unfavorable —

The Court: That is the substance of that opinion. The expression of his opinion, his own opinions, in so far as they have been expressed, are competent to contradict him, but any authorities that you have gathered there are not.

Mr. Miller: The pharseology immediately preceding the three last lines which I read was a little quotation from the pleadings in the case.

The Court: That is immaterial.

BY MR. MILLER:

Q. Did you or not as a part of your opinion make this statement —

Mr. Hirsch: Hand it to him.

The Court: Let the witness have it.

Mr. Miller: I will show it by marks around it.

The Witness: Yes, I wrote that,—I think I did, but if I did not write that, that is my opinion now.

BY MR. MILLER:

Q. And in that you stated: "This brings up the point of what is a poison. As you know, this has been fought over for years. Anything is a poison if the dose be small enough and anything is non-poisonous that is not capable of doing harm if the dose be large enough, including water, molasses and a host of foods." Is that your opinion?

A. That is my opinion.

Q. Sir?

A. That is my opinion.

Q. Now then, is Potter's Materia Medica, Pharmacology and Therapeutics, regarded as a standard authority, Doctor?

A. I hesitated—not because of any doubt in my mind—no, it is not.

Q. Did you not quote Potter in your book?

A. I do not think I did; it is possible that I did.

Q. Would you have quoted Potter if you had not thought him an authority?

A. I beg your pardon?

Q. I say, would you have quoted Potter if you had not thought him good authority?

A. Oh, yes; I might have quoted him if he had quoted some author and had not given any reference and I had to take his word for it. One reason I think Potter is not a standard authority is that there are many statements in his book which are just made up of hundreds of clippings taken from various medical journals without any effort on behalf of Potter to eliminate the good from the bad, and as the result there is some recommendation made in his book that would subject anybody who followed them to a suit for malpractice.

Q. Horatio G. Wood's book is a standard authority, is it?

A. A very good authority. I helped Doctor Wood edit the seventh edition of that book. His son was not old enoungh to do any work on that.

Q. Now, just a moment on that. You know Wood's book?

A. Yes.

Q. Well, he refers to the fact that there was a case of caffeine poisoning, does he not?

A. Well, I have not read Wood's book for a number of years. I am perfectly willing to take your word for it. I do not remember that.

Q. And that eight grains of caffeine increased the frequency of the pulse, frequent urination, tremors, excited the mental condition, passing into a form of delirium, with deep sleep?

A. That does not report a definite case and you have not read it to me showing that it is a definite accurate description of a case, and there is nothing to prove that Doctor Wood looked up a reference to that case, and it is quite possible if he had looked it up, it might have been something like one of these Allard cases, due to something else.

Q. Now then, in Wood it is likewise stated that an adult took sixty grains of so-called citrate which you un-

derstand to mean thirty grains of alkaloid, and that produced burning in the throat, giddiness, faintness, tremors, insomnia, burning in the stomach and bowels, and collapse followed.

A. Give me the name of the individual who made that report.

Q. I am reading on page 217, or what is supposed to be on page 217; that is the Routh case, isn't it?

A. I do not know whether it is the Routh case.

Q. Well, is that what appears on page 217?

A. That is not my book—I have not read the book.

Q. You do not know how that is, then?

A. No, sir.

Q. Didn't you state as a part of your opinion that Wood had had no experience with the use of caffeine as a general stimulant for acute adenia?

A. No, I did not. I did not say what experience Wood has had.

The Court: If that does not contradict anything he has said I exclude it.

Mr. Miller: I asked it for the purpose of ascertaining whether this witness knows.

BY MR. MILLER:

Q. Do you know whether Doctor Wood has had any experience or not —

Mr. Sizer: I object to that.

The Court: That is immaterial.

Mr. Miller: I mean the Mr. Wood who was on the stand the other day.

Mr. Sizer: Dr. H. C. Wood testified to certain experiments he made.

Mr. Miller: I understood that he testified as a practicing physician.

The Court: I thought you meant Wood, the author.

The Witness: They are both authors in that book.

The Court: I supposed he meant the father —

Mr. Miller: I am speaking of the one who was on the witness stand, and he was speaking of both, and I suppose I cannot be wrong about having the identical person.

The Court: I do not remember whether the witness testified as to any matter of his personal experience —

Mr. Sizer: The point is the written opinion that Doctor Hare wrote would not be admissible as to the qualification—would not be admissible, Doctor Hare's opinion—that is not contradictory of anything Doctor Hare has stated.

Mr. Miller: I asked him whether he knows if Doctor Wood has conducted any experiments along that line.

The Court: For what purpose?

Mr. Miller: He knows whether Doctor Wood has had any such connection —

The Court: Do you want to show by this witness that another man did not do what he says?

Mr. Miller: I infer from what he says —

The Witness: I have not said anything in connection with that matter —

BY MR. MILLER:

Q. I will ask you whether or not you know he has made any experiments or has not.

A. Your question is asked as to whether Horatio C. Wood, Jr., has made any experiments and my answer to that, by "experiments" you mean results you reported the other day, and I do know it because I told him how I thought they ought to be made and he came and told me the results that he had obtained from them. The prior question you asked me was a question that practically involves whether or not H. C. Wood had made any experiments and whether Wood, Jr., or Senior had any experience with administering caffeine,—I don't know anything about that.

Q. How did you come to have Doctor Wood make these experiments, were they made for the purpose of being used in this case?

A. Yes, they were made for the purpose of being used in this case. You asked me first as to how he came to make the experiments and I will say I got him to make them because I have known him all his life and have a high opinion of his reliability, I knew the laboratories in which he had worked abroad and had asked him to write the opening article for the last encyclopedia of treatment which I edited, and had every confidence that the work he carried out would be A. No. 1 in every respect.

Q. Now then, in that connection, as you state that Wood is a reliable authority, I ask you if you agree with his statement as to caffeine: "It is a powerful muscular poison—it first produces a condition in which there is exaggerated muscular excitability, with a tendency to tetanic contractions upon momentary stimulation, and afterwards a stage of stiffness, weakness, and finally lost excitability."

A. I have difficulty in answering that question directly. I do not know that anybody knows except the two Woods which one wrote that, and I do not know which Wood you refer to when you ask if I agree with "Wood."

And if you refer to the specific proposition, irrespective of the Woods, I say I believe that is a correct description of what happens to a muscle immersed with caffeine of any considerable strength and capable of acting in the way described.

Mr. Sizer: We move to exclude that because your Honor has already ruled that tests and experiments made by direct application to the muscle were not material in this case.

Mr. Miller: There is nothing to show that that was the way in which this was applied.

The Court: The witness states he so construes it and if that be the reasonable construction of it —

Mr. Sizer: Nothing to show that it is not, and therefore it has no bearing on the case.

Mr. Miller: I submit that this is a treatise on therapeutics by Wood, that is, a summary of his conclusions, and in the conclusion it does not appear anywhere. It has been brought out by a number of witnesses that where there was anything unusual in the symptoms or the conclusions, it would be shown by the authors, and in the context there is nothing to show to the contrary, and therefore we must act on the assumption that these conclusions are drawn, not from the direct application, because there is nothing to show that, and your Honor certainly recalls what the proof has been on that point, and if anything of that kind occurred it would have been shown by the author.

Mr. Sizer: This statement is not admissible as direct evidence at all. Doctor Hare says this is a reliable authority and it does not contradict anything that Doctor Hare says—it does not have that effect.

The Court: The witness has stated his answer, on direct examination, that the weight of authorities is that caffeine is not a poison and it is offered for the purpose of contradiction to that. If it relates to the administration of caffeine as a drug or beverage, I think it would have a tendency to contradict him. But if it relates to its direct application to the muscle, it appears to me it is not contradictory of any opinion expressed on direct examination. Let me see the book.

The Witness: Your Honor, may I point out a fact in regard to that book?—The title of that book for the first ten editions was :"A Treatise on Materia Medica, Therapeutics and Toxicology," and in order to make it apparently more attractive to the general practitioner, its title was changed to: "Therapeutics, Its Principles and Practice," but all the toxicology characteristic of the book was

contained in it and it is as much a text book as ever on therapeutic materia medica and toxicology. And although its title was changed, nevertheless it treats of toxicology or poisonous doses.

BY MR. MILLER:

Q. And you do that same way in your book?

A. I have never changed the title of my book.

Q. Well, you discuss poisons in the same relations?

A. I do not claim my book is a book on toxicology and he does.

Q. Well, you undertook to tell us what a poison was, didn't you?

A. I don't remember whether I undertook to tell you what a poison was. I stated that caffeine was not a poison.

Q. And that involves a mere conclusion without any knowledge of toxicology when you attempt to state that before the jury?

A. I may have certain knowledge that is not in my book.

The Court: It appears from page 212 of this work of Wood's which precedes by four pages the summary on page 216, which has been offered in evidence, under the title: "Muscle.—The action of caffeine upon the muscle is readily demonstrated by throwing the isolated gastrocnemius of the frog in one per cent or even weaker solution. In from two to three minutes the muscles become markedly contracted, swollen, round, stiff, and unable to respond to the galvanic current." It occurs to me that that summary has reference back to the previous paragraph which is intended to illustrate the direct influence of caffeine acting upon the muscle in solution and I think it is so remote from this present investigation that it would only have the effect of being misleading and confusing.

BY MR. MILLER:

Q. Caffeine does reach the muscle when administered by way of the mouth?

A. Probably it does.

Q. And these experiments, as you recall them, in Doctor Wood's treatises, were made for the purpose of showing what might happen when caffeine reached the muscle through the blood?

A. No, sir. I have just stated, I believe they were experiments to show what happened when the caffeine came in direct contact with the muscle.

Q. Under what circumstances is caffeine ever brought in direct contact with the human muscle?

A. Never.

Q. Then what was it put in that book for, Wood's book, that way? If that is so, it would not be a standard authority?

A. It was not put in Wood's book that caffeine is directly applied to the muscle of human beings. The object of incorporating this in Wood's book was to show the effect of experimentation on the muscle when it was directly applied.

Q. The object of it was to incorporate this in Wood's book so as to show the effect of caffeine on the muscle when administered through the mouth?

A. No; when it was directly applied, and Doctor Wood's book is not solely as to the effect of caffeine upon human beings, but is very largely devoted and understood to be a summary of effects of drugs on animals, independent of the relation of effects on human beings.

Q. And the object of that, which you helped to write, was to enlighten the practitioner and student as to the effect of caffeine on the human system?

A. No, no.

The Court: It is immaterial what the object is. The Court has read it and has excluded it.

Mr. Miller: We desire to note an exception. The four or five pages preceding that, we desire to have read into the record, preceding the summary.

The Court: As I have said, I think it would only lead to unnecessary complication in this case. It may be true that caffeine when directly applied to the muscles may have a certain effect, but in the most remote light, as when caffeine is administered through the mouth. It is clear that caffeine is broken down somewhere in the system and demethylated and broken into various xanthine bases and which one of these reaches the muscle, in what quantity they reach the muscle, in what minute particles and in what succession is so obscure as a scientific fact, that it will only be misleading in the opinion of the Court to attempt to draw any conclusion as to the effects of caffeine on the human system from experiments based on direct application of a solution of caffeine to the muscle, and for that reason, to avoid complication, as it has so little bearing, I exclude it.

BY MR. MILLER:

Q. Are you aware of any treatises that express the opinion that caffeine administered by way of mouth does not reach the muscle, or any treatises that teach it does not reach the muscle?

A. I do not know of any treatise which teaches it does or does not reach the muscle as caffeine.

The Court: If the witness' opinion on direct examination when he stated what he did was based in part on knowledge of Doctor Schmeideberg's opinion, I think you can cross-examine him on it and he may on re-examination state if Schmeideberg's work is a good opinion without reading it.

RE-DIRECT EXAMINATION.
BY MR. SIZER:

Q. I will ask you whether or not—or what date that paper bears.

A. Strassburg, the 23rd of November, 1910.

Q. State whether or not that opinion of Doctor Schmideberg confirms the opinion you have expressed on the witness stand in your direct examination.

Mr. Miller: I object to that because that seeks to ask the witness for the contents of the paper.

Mr. Sizer: And I am offering the paper.

Mr. Miller: I object to it, in the first place; and in the second place, it does not appear that he is dealing with caffeine. I am informed that the article is in German and that Doctor Schmiedeberg is dealing with tea and coffee which have been distinctly ruled out on us.

Mr. Hirsch: Well, Mr. Miller is mistaken about that.

The Court: Pass the exhibit to Mr. Miller before you ask anybody's conclusion —

Mr. Sizer: I do not think your Honor has ruled out any opinion about tea and coffee. I think it has been gone into very fully by witnesses on both sides.

Mr. Miller: We asked for certain publications as to tea and coffee —

The Court: That is where they were in reference to certain specific questions—

Mr. Sizer: Mr. Miller is mistaken in respect to this opinion, because it is on the subject of caffeine.

The Court: I want it to be handed to him before any questions are asked.

Mr. Miller: This is in German and it takes time to have it translated.

Mr. Sizer: I will ask Doctor Boos to read the title to that article.

The Court: Just let them have that article and examine it before you ask the witness.

Mr. Sizer: I wanted to see whether the article was on caffeine.

The Court: Just let them have it and you can offer

him, recall him.

Mr. Sizer: All right.

BY MR. SIZER:

Q. Did you furnish a copy to counsel for the Government of your opinion that you furnished or prepared for Mr. Hirsch?

A. Certainly not.

Q. Have you any idea how counsel got hold of it in this case?

Mr. Miller: I object to that.

BY MR. SIZER:

Q. Do you know how counsel for the Government got hold of it?

The Court: I do not see how it is material.

Mr. Sizer: I think if we can find out —

The Court: It makes no difference how they got it, for the effect of it in this testimony is the same. It does not have any effect one way or the other how they got it.

BY MR. SIZER:

Q. I want to get you to state exactly what you meant in an answer you gave on cross-examination to the effect that caffeine should not be used in acute kidney trouble. Did you mean by that it causes kidney trouble or that it is a substance which should not be given in acute kidney trouble?

A. I meant the latter. I said in acute inflammation of the kidney.

Q. You say it simply would not be proper to give it in that kind of trouble?

A. A person suffering from acute inflammation of the kidneys is a person who is in bed, or ought to be in bed.

Q. Now, referring to this Routh case, you say that according to the report of that case that man took citrate of caffeine?

A. Yes, sir.

Q. Well, what would be the effect of the citrate of caffeine in developing the symptoms that you explained on cross-examination?

A. Well, that would cause nausea and vomiting. It would be thirty grains of citric acid.

Q. And would that tend to produce those symptoms?

A. It certainly would.

Q. Is the word "poison" used in pathological works in a restricted—I mean, in pharmacological works, in a peculiar sense of in a sense different from that in which it is generally used, and if so, what is the manner in which it is used?

A. Yes, I think there is a little difference. But it may be, perhaps, after all a distinction without a real difference. In pharmacology, a man speaking of a substance being poisonous in its nature or that it produces certain effects which were injurious, I would understand that he meant a dose in excess of that commonly given medicinally. When a man in a book on toxicology spoke of a drug having produced a poison in one sense I would know that he meant a dose in excess of that commonly used medicinally, and I would understand that he was dealing with such effects as were intermedial in the other aspect of that question of whether a man had been damaged by its use.

RE-CROSS EXAMINATION.
BY MR. MILLER:

Q. Does not the ordinary lemon contain more than thirty grains of citric acid?

A. I am unable to answer that question. I do not know what percentage of citric acid is in the juice of one lemon, but if a man takes the juice of the lemon, he does not take thirty grains of pure citric acid, he takes thirty grains of citric acid mixed up with the water or the juice that the lemon makes.

Q. Well, it is owing to whether he sucks the lemon or not?

A. If he sucks the lemon he will get this unless somebody had been there before him.

Q. And he gets the citric acid in that connection?

A. Yes, sir; but in the dose of sixty grains, he gets thirty grains of pure citric acid, together with thirty grains of the caffeine, which is a solid substance.

Q. Why should not caffeine be given in kidney trouble?

A. I did not say that. I said it should not be given in acute inflammation of the kidney.

Q. Why not then?

A. Because in acute inflammation of the kidney, the kidneys are "hot," to use common language, and angry and bleeding, and any substance which acts as a stimulant or any substance which increases the functional activity of a part which is angry and inflamed—just as trotting a horse with an inflamed, hot knee is bad for it.

Q. And for that reason caffeine should not be given?

A. Under those circumstances, no.

RE-DIRECT EXAMINATION
BY MR. SIZER:

Q. May an agent or substance which increases phy-

sicological activity or stimulates, in other words, do so without producing any toxic effect?

A. Certainly it may.

RE-CROSS EXAMINATION.

BY MR. MILLER:

Q. Just a thought, Doctor: Kunkel is a standard authority?

A. I don't know a book by Kunkel. I have seen his name quoted frequently and as a man who has written articles for encyclopedical works.

Q. You do not base your opinion in any respect on what Doctor Kunkel said on the subject?

A. No, sir; not in the slightest.

Q. On the subject of the effects of caffeine?

A. No, sir; not at all.

(Witness excused.)

(The extracts offered from "Therapeutics, Its Principles and Practice," by Wood, which were excluded by the Court on page 2284 of this record, are as follows:)

"MUSCLE.—The action of caffeine upon the muscle is readily demonstrated by throwing the isolated gastrocnomius of the frog into a one-per-cent or even weaker solution; in from two to three minutes the muscle becomes markedly contracted, swollen, round, stiff, and unable to respond to the galvanic current. That it is the muscle-fibre which is affected is shown by the experiments of Pratt, who found that when an isolated muscle was soaked in a solution of curare until the nerves were killed, and then thrown into a solution of caffeine, the usual rigidity was developed. The elaborate studies of Leblond appear to prove that there are two stages (as in veratrine-poisoning) in the action of caffeine upon the frog muscle,—a primary stage, with exaggerated muscular excitability and a tendency to prolonged tetanic contractions after momentary stimulaion, and a final stage of rigidity and lost excitability.* W. Hebioranski believes that his erographic experiments prove that in fatigue caffeine not only stimulates the nervous system and thereby increases the working power, but also acts directly upon the muscle.

According to the researches of Paschkis and Pal, it would appear to be the Xanthine which influences the muscle-fibre, since these investigators found that caffeine (trimethylxanthine), theobromine (dimethylxanthine), and xanthine shared the activity; caffeine being the strongest, xanthine the weakest.

*Johannsen states that when a muscle under the microscope is touched with caffeine its fibres can be seen to

contract half their length.

CIRCULATION.—When given in a moderately large dose caffeine produces a marked increase in the rate of the pulse with an evelation of the blood-pressure. The increase in the pulse-rate is probably due to the stimulation of the cardio-accelerator mechanism, while the rise of pressure seems to be attributable to a stimulation of both the cardiac and arterial muscles.

According to Voit (quoted by Brill), in the frog the rapidity of the cardiac pulsation is at first increased, but the pulsations become slower and slower, and are accompanied by irregularity of rhythm, the heart finally ceasing to act, but still responding to stimuli at a time when the voluntary muscles are absolutely dead. Falk and Stuhlmann, and Johannsen observed that caffeine first increases and then lessens the frequency of the cardiac pulsations in the frog. According to Johannsen, the lessening of the frequency comes on the more quickly and the more powerfully as the size of the dose is increased. After a time the heart begins to beat irregularly, with short intermissions, which, as time goes on, grow longer and longer, till at last movement ceases. Johannsen found that the action upon the cut out frog's heart was the same upon the viscus in situ; Leblond confirms this and states that the heart is finally arrested in systole; so also does Thomas J. Mays. Aubert and Haase find that the action of the alkaloid upon the pulsations of the frog's heart varies greatly; and indeed the individual experiments of the authors previously quoted show such variation. This is confirmed by the research of Rioschiro Maki. This investigator experimented upon the cut-out frog's heart with the Williams apparatus, and found that the pulse was variously affected. In most of his experiments the arterial pressure—i. e.. the heart's work—was markedly lessened, but in a few cases it was distinctly increased.

Paul Faval finds that in a proportion of ten centigrammes to one hundred and fifty grammes of artificial blood the alkaloid reinforces the isolated frog's heart, givings its contractions more amplitude and more energy, but that stronger doses depress the heart, and finally arrest it in diastole; and H. C. Beyer has reached similar conclusions with the terrapin's heart.

MAMMAL.—The results by various experimenters as to the influence of caffeine on the circulation in mammals are in their general appearance contradictory, but are, however, we believe, reconcilable.

In attempting such reconciliation it seems better to discuss separately the effects of the drug upon arterial pressure and pulse-rate. In the Aubert and Haase experiments, caffeine usually produced pronounced fall of arterial pressure, although in one experiment there was a distinct rise. It is to be noted that the research was made with enormous doses of caffeine, and usually upon dogs under the influence of narcotics. In two experiments upon alcoholized dogs, Binz obtained a pronounced rise of the arterial pressure; while Naki, experimenting upon animals under the influence of atropine or chloral, obtained after large doses a distinct fall of the arterial pressure, which majority of the experiments the pressure exerted by the left heart was lowered, although in a considerable minority it was first elevated, especially when a small dose of the caffeine had been given. Bock concludes from these experiments that the elasticity of the heart-muscle is diminished by caffeine, and that the elevation of the arterial pressure naturally produced by caffeine in the normal animal is due to contraction of the blood-vessels. The method of experimentation seems to us very uncertain, and the result is in direct discord with other experiments already cited.

The total evidence seems to us conclusively to show that caffeine increases the arterial pressure independently of the vaso-motor centres.

In the advanced states of caffeine-poisoning both the heart and the vaso-motor system are without doubt depressed, so that the cause of the fall of pressure is duplex.

In regard to the pulse, Aubert notes as a constant effect an increase of the pulse-rate, and this appears to be the most frequent result produced by caffeine; but it has been shown by Reichert that under certain circumstances there is a slowing of the pulse.

Leven asserts that the increase of the pulse-rate is to be seen after isolation of the heart from the nervous centres, and is, therefore, due to an action upon the heart itself, a conclusion which is in accord with the general results of observations upon the isolated frog's heart, and is confirmed by Reichert, who believes that there are paralyses of the cardio-inhibitory centres, both in the in a few cases was preceded by a rise. It is evident that the method of research employed in these experiments makes it impossible to draw any very positive conclusions. In normal animals, Leven found in the first stages of caffeine-poisoning a distinct increase of the arterial pressure, and in the elaborate experiments of Reichert it was noted that is the normal dog caffeine injected into

the jugular vein, in moderate amount, caused a primary fall of pressure (evidently due to an overwhelming effect of the concentrated alkaloid upon the heart), followed by a rise above the norm, followed in turn, if the dose had been large enough, by a marked fall of pressure. Very large doses of caffeine produced a persistent fall of pressure, ending in final diastolic arrest of the heart. In none of Reichert's experiments was the rise of arterial pressure very great, but except after heavily toxic doses, it occurred almost invariably. Leven asserts that after he had divided the pneumogastrics and sympathetics and isolated the heart from all the nerve-centres, caffeine still increased the arterial pressure; while Rheichert states that not only is the increase of the pressure seen when the animal is motionless with curare, but also after destruction of the vaso-motor centres in the medulla oblongata. Loewi in oncometrical experiments on the intestines failed to obtain any evidences of the contraction of these vessels with caffeine and believes that the rise of blood-pressure is purely cardiac. Experimenting on the isolated mammal heart, Bock found that though there was a continual increase in the rate of the pulse in the majority of the experiments the pressure exerted in the rate of the pulse in the medulla oblongata and the heart. The slowing of the pulse occasionally seen in the first stages of the poison Reichert attributes, with probable correctness, to a primary stimulation of these cardio-inhibitory centres; the alteration of the pulse, which sometimes occurs in advanced poisoning he believes to be due to a direct action of the drug upon the heart. Bock believes that the frequency of the pulse usually produced by caffeine is the outcome of powerful stimulation of the cardiac accelerator apparatus, and that the inhibitory apparatus is not depressed, basing the latter belief on the fact that he has observed that section of the vagi in the poisoned animal still further increases the rapidity of the pulse whose rate is already much above the normal.

DIURETIC ACTION.—In poisoning by caffeine great increase in the secretion of urine is a common symptom, and the statement of Gubler that the alkaloid is one of our most powerful and certain diuretics, has received abundant confirmation. The effect of the drug upon healthy men would indicate that it does not act simply by regulating the circulation of the kidney, but has also a distinct effect upon the renal organ itself.

That caffeine acts directly upon the kidneys was proved by W. von Schroder and by A. Langgaard, who separately found that when a cannula was inserted into the ureters

in an animal whose vaso-motor system was completely paralyzed by chloral injections of caffeine into the circulation caused a very increase in the urinary secretion. Langgaard found that usually before the great increase of diuresis the urinary secretion was arrested for several minutes. This is in exact accord with the experiments of C. D. T. Phillips made with Roy's oncometer. It was found that immediately after the injection of a small dose of caffeine, when the blood-pressure was either slightly depressed, elevated, or unaffected, the kidney underwent a very distinct contraction of its volume, which lasted for two or even three minutes and was accompanied by great lessening or arrest of the urinary secretion. After the contraction, the kidney rapidly expanded beyond its original bulk, and at the same time the urinary secretion became excessive. Loewi found that caffeine is capable of dilating the blood vessels after division of the renal nerves and believes that the increased activity of the kidneys depends upon vascular dilation. These facts do not prove, however, that the diuresis is caused by the increased flow of blood to the kidneys. It is more probable that the dilatation of the vessels is the result, rather than the cause, of the increased secretion. Because the secretion from the uninjured kidney was increased much more than from the kidney whose nerves were destroyed, Schroder believes that the drug increases diuresis by acting both upon the nerve-centres and upon the secreting structure of the kidney. To our thinking, however, the direct injury to the secreting apparatus of the kidney by division of the renal nerves is sufficient to account for the difference between the influence of the alkaloid upon the normal and the operated-upon kidney, without necessitating the theory of a twofold action. Schroder found that there was an increase not only of the liquid, but also of the solids of the urine. Anten believes that caffeine increases an inhibitory influence of the pneumogastric nerve on the kidney, thereby interfering with its non-excretive influence, a theory which seems to us extremely doubtful.

TEMEERATORE.—We know of no recorded temperature curves of caffeine-poisoning in man. It is probable, however, that the effect of the alkaloid is precisely what it is in other mammals. Binz states that in animals minute doses have no effect upon the bodily temperature; doses just enough to produce slight toxic symptoms cause a rise of 0.6 degrees C.; excessive doses cause an elevation of 1 degree to 1.5 degrees, C., the maximum being reached in one to two hours; doses which rapidly kill have very

little effect upon the temperature.

GENERAL NUTRITION.—The enormous use made by mankind of substances containing caffeine indicates that in some way it is directly of service in the wear and tear of daily life. The experimental evidence, however, although not conclusive, does not point towards any marked effect of the drug on metabolism.

This subject was laboriously investigated by Julius Lehmann in 1853, and by F. W. Bocker in 1854, and earlier. Lehmann found that the exhibition of six grains of caffeine daily, the regulated diet being uniform, diminished the elimination of urea from twelve to twenty per cent. Upon experimenting with the empyreumatic oil of coffee he found that it lessened even to a proportionately greater extent the elimination of urea, and also acted very powerfully in producing sleeplessness, so that the favorite beverage is by no means dependent upon its contained caffeine for all of its activity. Bocker published his first researches on coffee in 1849, but we have never seen any abstract of the article, other than the statement that he found that the drug causes diminished elimination of urea. His investigation of the effect of tea was most elaborate and laborious. He analyzed the feces, the urine, and the products of respiration, and found a similar diet being maintained, that tea did not effect sensibly the elimination of carbonic acid from the lungs, but did very decidedly diminish the excretion of urea, and also of nitrogenous matters in the feces. He then tried abstaining from food for periods of thirty-six hours, with and without the use of tea, with results perfectly in accord with those just stated. The results obtained by other experimenters are, however, singularly discordant. Henry Hoppe found that, in the dog, coffee diminishes very slightly the urea-elimination, but greatly increases the output of carbonic acid. In regard to urea, Rabuteau and his pupil Eurastratiade, working with coffee upon men and dogs, obtained results similar to those of Bocker, as did also Hammond in this country. On the other hand, C. G. Lehmann, Voit, and Roux found that caffeine or coffee sensibly increases the elimination of urea, or in those accustomed to the daily use of coffee has no influence. In a long series of experiments upon dogs by Couty, Guimaraes, and Niobey, it is affirmed as a uniform result that the use and assimilation of nitrogenous food were greatly increased, that the carbonic acid and oxygen in the blood were markedly decreased, and that the proportion of sugar and of urea in the blood was notably increased.

In the fact of so much contradiction it is perhaps wisets

to reserve opinion, but it does seem as though the present evidence warranted the conclusion reached by E. Dorisot that the action of caffeine upon urea-elimination and upon protoplasmic change is inconsistent, and not direct and pronounced. It is true that in a long series of very elaborate calorimetrical experiments performed by E. T. Reichert it seems to have been proved that caffeine increases the heat production as well as the heat dissipation, and that of these phenomena, the increase of the heat-production is probably primary. This result is in accord with that of Wilhelm Heerlein, who found marked increase in the consumption of oxygen and formation of carbonic acid produced under the influence of caffeine. Nevertheless, the united results, if their accuracy be accepted, do not show that destructive metamorphosis of nitrogenous tissue is increased by caffeine, but only that there is an increased destruction of carbohydrates.

SUMMARY.—Caffeine is a powerful stimulant to those cells of the cerebral cortex which are functionally connected with consciousness and intellectual action. It is also mildly stimulating to the respiratory centres and probably to the motor cells of the spinal cord, but seems to be without action upon the nerve-trunks. It is a powerful muscle-poison, at first producing a condition in which there is exaggerated muscular excitability, with a tendency to tetanic contractions upon momentary stimulation, and afterwards a stage of stiffness, weakness, and finally, lost excitability. It is a mild stimulant to the circulation; probably by virtue of its relation to the muscle-fibres it increases the cardiac force and perhaps also directly contracts the arterioles. In overdose it depresses the circulation, probably acting both upon the heart and the blood vessels. It is absorbed with rapidity, and is to some extent decomposed in the body, and at least in part, eliminated through the kidneys, upon whose secreting structure it exerts a marked stimulating influence. Although the evidence is contradictory, it is not at present writing probable that caffeine has any distinct specific influence upon protoplasmic nutrition, but it does appear to directly increase the production of carbonic acid and of animal heat."

DR. WALTER S. HAINES,

the next witness called on behalf of the Claimant and Intervenor, The Coca Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Your full name?

A. Walter S. Haines.

Q. And your residence, Doctor?

A. I live in Chicago.

Q. What is your occupation, Doctor?

A. I am a teacher or professor in the Rush Medical College in Chicago and in the University of Chicago.

Q. How long have you been a teacher and professor?

A. I have been in Rush Medical College for the past thirty-five years and in the University of Chicago for the past ten years.

Q. What experience have you had in experimenting on animals with different substances?

A. I have experimented with a considerable number of lower animals with a variety of substances.

Q. Will you please state in a general way these experiments on animals, how they are carried on, the mode you carry them on? Just tell the jury.

A. A certain number of animals was selected which are all as nearly the same in size as we can get them, and in other conditions, as possible. These are divided into two groups, then, each group being as nearly of the same size and weight as the other group. Those two groups of animals should be kept side by side under identical conditions, the same light, air and food and all other conditions should be identical.

In one of these sets of animals the substance the effects of which we are testing is given, and that set is called the test animals and the other set that is given nothing, those are called the control animals. When I say we give nothing, I mean to say we do not give the substance the effects of which we are testing, but it is desirable in order that the same amount of impulse should be produced——it is desirable to give the control animal at the same time the same amount of pure water, we will say, so that any effects produced by the administration of the substance in question may be detected.

These two sets of animals should be treated, if possible, side by side, and at the same time, in order that there may be absolutely no difference, excepting only in the substance administered to the test animals.

A set of controls is indispensable, therefore, in order that we may reach conclusions as to the effect of the substance we are experimenting with on the test animals.

Q. Have you performed any experiments in regard to caffeine on the lower animals?

A. I have.

Q. I wish you would describe the nature of the test, how long the period was or went over, and what was done

to each of these animals, and where they were delivered to, if to anybody.

A. A year ago this past January, that is to say, in January, 1910, I secured a number of guinea pigs. I selected from the guinea pigs two sets, one a set of control animals and the other a set of test animals. The control animals to receive no caffeine and the test animals to receive that substance. I had seven animals in each group, seven tests and seven controls.

There were in each group the same number of males and females. That is to say, there were four females in the test set and four females in the control set, and there were three males in the test set and three males in the control set. The two sets were weighed at the beginning of the test and the same amount—they weighed practically, both fifty ounces—that it, the seven animals taken together in the test set weighed fifty ounces and the seven animals together in the control set also weighed fifty ounces.

The animals were all of about the same size. There were slight variations in weight but it was immaterial; each animal weighed on an average in each set about seven ounces. These animals, the two sets, were placed in two cages that were side by side. In fact, it was a large cage with a partitition in the center, a wire screen running down through the center, to separate them completely, but they were side by side and therefore had the same exposure of air, sunlight and other conditions.

Each set was fed regularly, each day with the same food and the same amount—the food was weighed and each set received exactly the same amount as the other set, and the food of each set was taken from the same source of supply.

The materials fed them were carrots and oats. The carrots were taken for the test set and for the control set from the same bag, the same carrots being used for both. The oats were taken out of the same bin. Each received the same carrots and the same oats in the same weighed amount.

During the summer of last year it was impossible occasionally to get carrots, then I was obliged to give the animals freshly cut grass, but each set received the same amount of freshly cut grass as the other did. The grass was weighed for each set.

The test set were given caffeine. The control set was not given caffeine. The caffeine was administered to the test set by dissolving it in water and letting this solution drop into the mouth of the animals. The animal was

taken up and put on its back and the mouth gently opened and the solution of caffeine dropped in and the animal swallowed it. In order that an equal amount of material should be given to the control set, they received at the same time the same amount of pure water. They were also, each one, put on its back and the mouth opened and the same amount of water dropped into the mouth and the water swallowed. So that each control received the same treatment as did the test, the only difference between them was that the tests were given caffeine while the controls were not.

This test was commenced on the 22nd of January a year ago. The animals receiving caffeine each got 1/30 of a grain each day. The weight of the animals was noted. This was calculated to represent ten grains of caffeine to a man weighing 150 pounds. The dose of caffeine was given in the morning before they were fed, and it was all given at once, the object of this being to give the caffeine on what is commonly called an empty stomach, and it was all given at once so as to produce the full effect of the substance, if any effect was produced. They were therefore given the dose in the morning and in the morning before feeding, and the entire dose was given at once. After the first day, I noticed that the animals receiving this quantity of caffeine were restless and I watched them the next day and found they were more restless. It was perfectly clear that the animals taking the caffeine were more restless than the animals that did not receive the caeffine. I came to the conclusion from the effects on them that I was giving them more than was necessary to secure the data that I was seeking, and I therefore reduced the quantity on the 27th of January, to 1/60 of a grain, that is the quantity corresponding to five grains administered to a man weighing about 150 pounds. From that time, no irritability of the animals was shown; as the animals increased in weight, the dose of caffeine was increased. I ought to have stated at the start that all the animals were young animals, they were all animals about between one-third and one-half grown. They were animals approximately from six weeks to two months old. They were young animals. They therefore grew in size naturally, and as they grew in size, the amount of caffeine given to them was increased.

On February 14th, the amount was increased to 1/45 of a grain and on February 28th to 1/30 of a grain and on April 5th, it was increased to 1/15 of a grain. By this time the animals had gained in weight very considerably so that this 1/15 of a grain calculated to a man

weighing 150 pounds, would be ten grains, that is the 1/15 of a grain given to animals of that weight correspond to ten grains given to a man weighing 150 pounds. The caffeine was kept in this quantity and then gradually increased to September of last year when each animal of the test set was receiving 1/4 of a grain of caffeine. Considering their weight, this was equivalent to 25 grains of caffeine to a man weighing 150 pounds. During this period I watched the animals carefully, the test set and the parallel set, and I could see no difference between them in their actions that was especially noticable, and they appeared practically the same. They both ate their food well, both sets were seemingly normal natural animals. The experiment, with certain exceptions that I shall speak of presently, went on until the 24th day of January of this year, that is to say, the experiment was conducted over a period of one year and two days.

Going back for a moment, I should say that during this year, animals of both test and the control set were killed from time to time in order to determine what, if any, changes had taken place in their bodies under the influence of caffeine.

On the 24th of May, that is to say four months and two days after the test was started, two animals of each set were killed, two test animals and two control animals.

On July 6th, five months and fourteen days after the test was commenced, one animal of each set was killed.

On August 6th, that is six months and fourteen days after the test began, another animal of each set was killed.

I had intended keeping all the rest of the animals, three in number in each set until the conclusion of the experiment, but on the 3rd of November one of the control animals died and the control animal having died, I though best to kill one of the test animals so as to have the same number in both sets. Therefore, a test animal was killed shortly afterwards and the animals, therefore, in each set was reduced to two, two test animals and two control animals.

These four animals, two of which caffeine had been given and two to which distilled water had been given were continued until the close of the experiment, January 24th, or twelve months and two days from the beginning of the experiment.

The animals were killed in all cases by the use of chloroform and immediately after killing them, the bodies of the animals were taken by me to the laboratory of my colleague, Doctor E. R. LeCount, and I watched him make

the post mortem examination on each of them. I carried the animals to him immediately so that they were within his hands within five minutes, it not sooner, after they had been killed.

The animals of both sets were weighed at frequent intervals. They were weighed chiefly as a set, the caffeine set by itself and the control set by itself, being separately.

There was fluctuation of weight in both sets up and down. There was on the whole a steady progressive increase in weight of both sets, but there was some fluctuation.

Taking all the weighings of both sets and averaging them, I find that the test animals on an average weighed each 21.5 ounces. Taking all the weighings of the controls and averaging them up, I find that they weighed 20.7 ounces, therefore, the average of all the weighings was slightly in favor of the test animals. They weighed a very little more than the controls, a difference of .8 of an ounce; four-fifths of an ounce for each animal on an average is not large enough to draw any conclusion from if this experiment alone is considered. If other experimenters reached the same result with other animals, it would then be significant, but standing by itself alone, I do not attach any material importance to the fact that the caffeine animals gained slightly more in weight than the control animals.

Q. What is the duration of a guinea pig's life as compared with that of a man?

A. Their average life is about two or three years.

Q. The period which you fed them represented from one-half to one-third of a guinea pigs' life?

A. Yes, sir.

CROSS-EXAMINATION.

BY MR. MILLER:

Q. You are a toxicologist and have written a book on toxicology?

A. Yes, sir.

Q. Were those control animals kept under your own eye, or were you assisted by other persons in keeping your control and test sets of animals?

A. They were kept under my own eye. I had an assistant who helped me in the work, but I weighed out the food myself and I gave it to them myself and I conducted the experiment myself with the aid of an assistant, who is necessary in conducting an experiment of this sort.

Q. One must have assistants or you could not discharge

your other duties without having someone else to assist you.

A. It would have been difficult to do it. I had my other work, and it would have been difficult to do it without assistants, but I weighed the food and I fed the animals.

Q. You were engaged as a teacher part of the time?

A. Yes, sir; I had my lecture courses in the college and university.

Q. You were more or less away from the place where the animals were kept during a portion of the time?

A. Yes, sir. The animals, I may say, were kept under lock and key. Each cage was locked up and I had the key with me.

Q. By cage you mean an arrangement or iron bars through which food could be inserted if the attendants had desired to insert it?

A. It was made of wire cloth, I might call it, of large mesh.

Q. So that if the attendant had desired to insert food through there, such things were possible but you don't think he did it because he was reliable?

A. Yes, it could have been done if a person had wished to be dishonest about it.

A. The analysis that was made was the analysis that was testified to by Doctor Le Count?

A. No, sir; Doctor Le Count has not testified regarding those animals yet.

Q. He has not testified about this?

A. Not at all, no sir.

Q. Then the only examination so far was made by Doctor Le Count?

A. So far as I know, the only examination made by him. I was present when he made the postmortem examination but I was not present when he made the microscopical examination.

(Witness Excused.)

DR. E. R. LE COUNT,

recalled to the stand for further examination, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. You heard the testimony just given by Professor Haines?

A. Yes, sir.

Q. I wish you would explain to the Court in detail what you did with those animals that were turned over to you as Professor Haines stated they were turned over to you.

A. They were examined in the way in which post mortem examinations are usually made upon the bodies of animals subjected to such experiments. The post mortem examination began with an incision in the median line of the abdominal surface. Then I proceded to examine all the organs of the animal's body, and the brain. For example, I examined the lungs, the heart, the spleen, the thyroid gland, the salivary gland, liver, pancrets, stomach, alimentary canal, kidneys, suprarenal and the generative organs and the bone marrow in some instances was examined, with first the unaided eye and sometimes the use of a small hand lens which would magnify just a few diameters, and then from the important organs, portions were taken for microscopical examination.

Q. Did you examine each organ microscopically as well as microscopically?

A. I would not be sure in the case of every organ, but in the case of every animal, all of the important organs were examined microscopically.

Q. Did you find any difference between the animals presented to you?

A. No, sir.

Q. No change whatsoever and no difference between what were known as the control and test animals?

A. The animal that died spontaneously, the control animal, that animal was found to have an infectious disease with an organism, and this bacteria or germ was found present in a great many places in the body, and it is believed or we concluded that the animal died from an infection. That was a control animal. Then in the case of one of the control animals and in the case of a test animal, both killed at the same time, there were found very minute changes microscopically demonstrable only in the kidneys. These changes were found, as I have stated, both in a test animal and in a control animal. They were two animals that were killed, I believe, some time in January of this year, after they had been kept under observation for a year.

Q. Did you examine the brain and spinal column?

A. Yes, sir.

Q. Did you find any evidence of chromotolysi?

A. I did not.

Q. Can chromotolysi be discovered without a microscopical examination?

A. No, sir.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. You did not make any test of the urine of those

animals, if I understand you?

A. No, sir.

(Witness Excused.)

Mr. Sizer: Referring to the Schmiedeberg, we have a typewritten translation of it, if your Honor wants to see it.

The Court: Let Mr. Miller have it before submitting it to me.

Mr. Hirsch: We will have copies made and submit them to both.

DR. SAMUEL P. SADTLER,

the next witness called on behalf of the claimant and intervenor, The Coca Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Will you give your residence and occupation?

A. I live in Philadelphia and I am a chemist.

Q. State generally your qualifications as a chemist.

A. I am a graduate of Harvard University, having taken my scientific degree in the Lawrence Scientific School in 1870. I went to Germany and made my Doctor's degree at the University of Goettingen, and I returned here in the fall of 1871 and since that time been engaged in the teaching of chemistry. I have had a number of teaching positions. I have been a teacher of chemistry in Philadelphia since 1874 and for 17 years I was Professor of Organic and Industrial Chemistry in the University of Pennsylvania and resigned from that institution in 1891 to go into practice as consulting chemist, but at the same time, I have held another position as Professor of Chemistry in the Philadelphia College of Pharmacy now for 33 years and I still hold that position.

Q. Have you made analysis of Coca Cola syrup, and if so, where did you obtain the sample and give the result of the analysis.

A. I had two samples sent to me from Chattanooga, one of the fountain syrup and one of the bottler's syrup and the latter sample was from G. T. Hunter, and it recites that one bottle was taken out shipped by J. F. Johnson and that is the bottler's syrup; and the fountain syrup was taken out and shipped by W. H. Foster. I have the original containers with the names of those parties upon them.

Q. What was the result of your examination?

A. The result was the finding of .20 of one per cent. of caffeine in the one and .19 in the other. In the foun-

tain syrup—I should have said .21 of one per cent. which amounts to 1.2 grains per fluid ounce. In the bottler's syrup, I found .20 of one per cent which amounts to 1.18 grains per fluid ounce. Those are the caffeine contents.

Q. Have you seen Merchandise No. 5 manufactured?

A. I have.

Q. When and where?

A. I visited Maywood, New Jersey, and witnessed the manufacture of it.

Q. Did you make any analysis of the preparation known as No. 5, and if so, what was the result?

A. I made an analysis of No. 5 also, and found it to be free from cocaine. I found it to contain definite quantities of caffeine and a small amount of theobromine, and I found it to give certain reactions indicating tannin.

Q. Have you made any attempt to establish in your mind the presence of No. 5 in Coca-Cola syrup or the sample furnished you for analysis?

A. Yes, sir. I carried through experiments of that sort and have made experiments to recognize the several constituents of No. 5, that is the cola extracted matter including tannin, and the tannin of the cola nut.

Q. What else?

A. The coca leaf extracted matter and the cola extracted matter.

Q. What is the experiment you made to determine the presence of the coca leaf and cola nut?

A. I carried through first, experiments on some of the No. 5 solution with reference to ascertaining whether the coca extractive matter was present there. It was carried through parallel, through two experiments, one No. 5 and the other with an alcohol extract I made from the decocainized leaf. I carried the parallels to study the analogy of the reactions, and after getting what would be an eqeous infusion, because I made perfect extractions with chloroform, both acid and alkaline solutions and rejected them because they would combine the alkaloidal and I found that with No. 5 the reactions perfect, responsive in regard to coloration and precipitant with the extract made directly from the coca leaf and with No. 5 extract which was furnished me. Then besides, I might say after I had eliminated all the alcohol alkaloid by chloroform extraction, the neutral eqeous solution had a very distinct odor of coca leaf which was recognizable. Then the resinous extractive matter was tested in a variety of other ways. That was equally solvent in solvents and gave no coloration with strong sulphuric acid, and in that way, I was satisfied I had the same material from the leaf and from

the No. 5.

Q. You say you found a trace of theobromine in No. 5?

A. Yes, sir.

Q. How was that obtained?

The Court: We will now adjourn for recess.

(Thereupon the Court, at 12 o'clock noon, adjourned until 12:20 o'clock P. M.)

AFTER RECESS.

Court met pursuant to recess at 12:20 o'clock p. m.

S. P. SADTLER,

resumed the stand for further examination.

BY. MR. HIRSCH:

Q. What was the last question—I believe though you have not got it (addressing the stenographer) I believe it was in regard to there being a trace of theobromine coming from—

A. (Interrupting) Theobromine which I found in the analysis of No 5 from the kola nut.

Q. Doctor, do you know whether there is any tannin and if so what per cent in California white wine?

A. California white wine is of course a different thing from California red wine, just as white wine is different because there is an entirely different process in the manufacture, and white wine contains much less than the other —that is shown by the United States Pharmacopœia which states the test for white wine and the tannin which is contained in white wine —

Mr. Miller: I would like to have the pages.

Mr. Hirsch: Where is that found?

The Witness: I can point it out in one of the dispensatories—I have not got the pharmacopœia here.

Mr. Miller: I desire to have my attention specifically directed to the page.

The Witness: If anybody has a pharmacopœia here I can point it out.

The Court: Have you a copy here?

Mr. Hirsch: Here is the dispensatory, it is quotation from the pharmacopœia.

The Court: Well that may be handed to the witness.

The Witness: All right, sir.

The Court: I do not know whether Dr. Schaefer said he used a white wine or a black wine. I understood him to state a California wine.

Mr. Miller: That is all he said—a California wine—

The Court: Do you agree it is a white wine?

Mr. Miller: I do not agree to that.

BY. MR. HIRSCH:

Q. Dr. Sadtler did you see the process by which No. 5 was manufactured?

A. Yes, sir; I saw the wine that was used. He used white wine.

Mr. Miller: My point in that connection is that the Doctor stated he used which ever was the cheapest on the market.

Mr. Hirsch: That was between alcohol and California wine.

Mr. Miller: I respectfully submit until they show which of these particular wines he bought, evidence on this point would be incompetent—

The Court: I don't think he said as between different kinds of wine he bought the cheapest; his attention was not directed to that. He said as between California wine and alcohol he bought the cheapest. He never did state as I remember what kind of wine. I remember thinking there were different kinds of California wine—I think they have sufficiently shown for the purpose of it going to the jury that it was white wine and not red wine— and it is a question of weight—as to whether the jury is of the opinion they have made it out sufficiently.

Mr. Hirsch: We will have to recall Dr. Schaeffer from Maywood to prove it.

The Court: Proceed.

The Witness: I find it on page 1707 of the National Standard Dispensatory and quoted from the United States Pharmacopœia, giving the official tests for white wine and in those tests I find as follows: for 10 c. c. of white wine—

The Court: I don't think counsel asked for it to be read.

Mr. Miller: No, I just wanted the reference.

Mr. Hirsch: Just the reference doctor.

The Witness: Read that about tannin?

Mr. Hirsch: No, give the page.

The Witness: On page 1707 of the National Standard Dispensatory, the test for tannin.

BY MR. HIRSCH:

Q. Have you made any tests to ascertain the amount of caffeine in cocoa and plain chocolate?

A. Yes.

Q. What were the results of your test?

A. I have anaylzed plain chocolate—Walter Baker's cocoa and Walter Baker's plain chocolate and separate from theobromine, the caffeine I find —

Mr. Miller: (Interrupting) I object unless he knows

about the composition of these things as originally made up by the manufacture—I submit his test in that respect would be incompetent evidence—he is not sufficiently acquainted with the matter under consideration—he says he took a certain mixture—unless he knows what the manufacture puts in it, it is not competent—it is too remote.

The Court: I understand the reason for which it is offered is to show the effect of cocoa as consumed by people using it. In so far as that may have any bearing—the question is as cocoa is manufactured and sold to the concumer—the process is not material. The very thing he is trying to get at is the cocoa sold on the market, that is what he is trying to do. It appears there are certain other ingredients in cocoa besides caffeine and before I let that cocoa matter in I want to know from somebody the amount of caffeine in a cup of cocoa—if that is shown—

Mr. Miller: (Interrupting) My point was just this—that unless this witness knew what was put in there he cannot speak—he couldn't speak from what he was told by the manufacturer.

The Court: As I understand from the doctor he bought a sample of Baker's chocolate and cocoa on the market.

The Witness: Yes, sir.

The Court: And analyzed it as ordinarily sold without any statement from the manufacturer as to what it contained.

Mr. Miller: I submit that if he buys a thing with a label on saying it is so and so without showing whether he has analyzed it —

The Court: He proposes to show he has analyzed it, and what it contains.

Mr. Miller: He does not undertake to say what the manufacturer puts in it when he manufactures it.

The Court: It seems to me it is utterly immaterial about that—the question is what is in it when it is sold to the consumer; to determine the effects of caffeine on the consumer—the question of how it got in there is not material.

Mr. Miller: I submit that two wrongs don't make a right.

The Court: I do not understand Mr. Miller that the use of coffee or tea or cocoa is offered as justification, but that it is offered for the purpose of showing the world uses it, and is not hurt by it. They are offering this for the purpose of showing and I gather that by inference—that caffeine is not injurious to the human race, for they say it is used by the human race—coffee, tea and cocoa, without injury. I have allowed the tea and coffee matters

to be gone into because they appeared to be near enough in proportion of caffeine to make the matter one of some relevancy but I will not allow them to go into cocoa unless that also appears, and I have to pass on that preliminary question after I find out from somebody about how much caffeine there is in there—if there is very little caffeine—one fifth of a grain or something of that sort, I think it would be too remote. If it appears there is approximately a grain or so of caffeine in a cup of cocoa, a grain to a grain and a half, I will admit it.

BY. MR. HIRSCH:

Q. Proceed doctor?

A. I purchased a sample of Walter Baker's cocoa and plain chocolate. I analyzed them by the use of the methods of the National Agricultural Chemists Pamphlets provisional methods for the analysis of these materials. I find two-tenths of one per cent of pure caffeine in the breakfast cocoa and seven-one-hundredths of one per cent in the plain chocolate.

BY THE COURT:

Q. And how much would you figure that would be in the average glass or cup taken?

A. That depends entirely on how many ounces of cocoa powder is taken to make a cup of chocolate. I think it ranges from 7½ to ten grams—when I said ounces I should have said that—the weight necessary for a cup of chocolate to make—well I would say that a cup of breakfast cocoa would be about one-third that contained in a fluid ounce of the coca-cola syrup.

Q. And how much in the chocolate?

A. Well, in chocolate I couldn't say; it depends entirely upon how it is made up for a drink but I know how much would be used in a cup of —

The Court: It is therefore excluded—I exclude the cocoa matter for it also has been shown there are other active principles in the cocoa that might neutralize the caffeine, and the whole thing would be going into unnecessary complications, so far foreign as not to afford any just test and I exclude it.

Mr. Sizer: Your Honor, the testimony is not altogether as to caffeine because cocoa and chocolate have theobromine which is a closely allied chemical in its physiological effects—

The Court: But as I said with reference to the application of caffeine to the muscles, it is getting us pretty far afield, and there may be differences that chemists do not understand as yet, and I do not think I will complicate this

case by allowing it to go in.

Mr. Sizer: Very well, you may cross examine him.

CROSS-EXAMINATION.

BY MR. MILLER:

Q. Doctor, did you make a test of coca-cola syrup prior to the one that you have detailed in response to adversary counsel?

A. I had analyzed coca-cola syrup in 1907.

Q. And you found practically the same ingredients?

A. I found the same ingredients, slightly different in amount but within very narrow limits.

Q. Now, I will ask you if you wrote a letter to the Coca-Cola Company in response to their request, or of your own volition, about 8th October 1907, addressed to the Coca-Cola Company, Philadelphia Branch, based on that analysis?

A. I reported that analysis to the Philadelphia agency of the Coca-Cola Company.

Q. I pass you what purports to be a copy of that analysis and ask you if you recognize it as being correct report that you made at that time?

A. I think it is correct as far as I can see.

Q. Now, in that report, which was made, you reported that there was no tannic acid, didn't you?

A. I say that.

Q. Now, in this compilation that you assisted in preparing you stated that tannin was a synonium for tannic acid?

A. Yes, sir.

Q. So that in 1907 on October 8th you found no tannin in your analysis of coca-cola syrup?

A. I overlooked it then; I have found it since.

Q. Well, did you overlook it then or has it been changed since then?

A. I probably overlooked it.

Q. Well, I ask you now, did you or not do as your statement stated, that you purchased in the open market that product and made a careful analysis of it, and that you found no tannic acid?

A. I stated that.

Q. Now then I ask you whether or not you overlooked it?

A. I think I did.

Q. You think you did?

A. Yes, sir.

Q. Why do you think you overlooked it then?

A. Because I have since found it present, proving it is

present in every sample of coca-cola syrup I have examined since.

Q. Now, isnt that proof of the fact that the formula has been changed since October 8th 1907?

The Court: That is a matter for the jury.

BY MR. MILLER:

Q. And you reported at that time that you found no caramel coloring?

A. Yes, sir

Q. And that was based on a careful analysis?

A. That was based on tests for caromel which I have carried out since. They are in there or not in there distinctively—I have got the test by Crampton's method—

Q. (Interrupting) Now, you closed that opinion with the statement "At the same time coca-cola is entirely free from tannic acid" didn't you?

A. I suppose I did if it is there.

Q. Well, I ask you?

A. I believe that is substantially correct as I wrote it.

Q. And by tannic acid in these decoctions you meant of course "coca" and "cola?"

A. Yes, sir.

Q. Now, you say that since that time you have made certain tests and ground certain derivatives of certain tannin?

A. I do. That was found in—

Q. That was found in merchandise No. 5?

A. And in the finished product both, I found the tannin.

Q. What is the difference, doctor, between the tannin that is found in coca and the tannin that is found in cola?

A. They give slightly different reactions but there is no difference distinct enough to enable one to state in any fullness what was the difference; it is impossible to establish any difference in the formula, and I carried through careful tests on the decoction made from the leaves and the decoction made from the ground nut, I say there is a slight difference.

Q. And yet you are unable to tell what they are?

A. I am able to tell what they are; I carried them out.

Q. Then tell us what they are please?

Mr. Sizer: Are you going to offer that letter in evidence.

The Witness: I have asked him only about certain statements in the letter.

The Witness: I have made aqueous infusions from the

decocainized leaves.

BY MR. MILLER:

Q. Well at that point, hot or cold?

A. Boiled with water, with boiling water in each case.

Q. I will ask you to give the details fully?

A. Aqueous solution made from ten grams of decocainized leaves, using 100 c. c. of water and set for half an hour and filtered, and that was the method used for preparing the first infusion. The other was exactly the same, used ten grams of cola nut and 100 c. c. boiled, and set aside and then filtered. In carrying out that with a variety of re-agents I found a slight difference —

Q. (Interrupting) What re-agents did you use doctor?

A. First that of lead acetate, with a solution of lead acetate. In the case of the coca-cola tannin I got an evident flocoulent precipitated of a yellowish color, and the supernatant alkaloid remained green. Used the same reagent with infusion from the cola nuts and I got a flocculent precipitate of somewhat yellowish red color, and a supernatant alkaloid that is colorless.

Q. Now these decoctions, what were they, different infusions entirely, one of the coca and the other of the cola?

A. Yes, taken separately.

Q. Now, proceed.

A. One per cent solution, a slight turbidity with the cola nut infusion—no turbidity with precipitate with cynconine sulphate 1½ per cent solution, and slight precipitate in both cases with ferri chloride.

Q. And that means what, that is some sort of iron, tell what it is?

A. Ferri chloride is a chloride of iron in which the iron is in the higher state—ferrichloride is a recognized reagent for tannin. That ferrichloride infusion from the coca leaves gives an olive green color, which is a strong precipitate; with the cola tannin or the infusion from the cola nuts, a greenish red color —

Q. Is that as far as you went?

A. No, one more with ammoniacal cynide of potassium —a brown color in the case of the cola infusion and a reddish brownish color in the case of the cola nut infusion.

Q. Now, did you make any experiment of that kind with respect to tannin in the California wine?

A. I tried the reaction ferrichloride which is the most distinctive reagent with California wine.

Q. Up to this ferri-chloride test there are very many tannins which give the same response?

A. Well I have no difference in the ferrichloride reaction between these two used, and I will give you the

reaction of white wine.

Q. Are there very many tannins which give the came reaction or response up to the ferrichloride test?

A. You mean with the ferrichloride test?

Q Yes, I mean up to that point?

A. There were slight distinctions, I noted all the way through.

Q. But are there not very many tannins that are found in the leaves of various plants that up to that point give the common precipitation or test?

A. I couldn't say from positive knowledge because I have not made sufficient laboratory investigations of those.

Q. Are there very many that give the same response when the ferrichloride tests are applied?

A. Yes, sir, there are analogous and similarities in behaviors of various tannins. Certain tannins give green color and certain tannins give deep blue color.

Q. Now after that, after you pass that ferrichloride test I ask you if there is a difference, if any of you noted, with the tannin of California wine and the tannin of the coca-cola?

A. Coca-cola gives the most intense coloration I have found in these examinations, gives a deep oliver color.

Q. What does California wine give?

A. A slight turbidity which gives the effect of a smoked color appearance; no green shade persistant in it at all.

Q. What does coca infusions give?

A. With me what I call a rather redish tint of green; if I remember correctly, a greenish red I would call it is; it is a distinctively different tannin.

Q. Which kind of California wine did you use in making that test?

A. Some of the white California wine brought from Maywood and which I saw taken from the stock there.

Q. Did you ever make any test to ascertain what would be the reaction in a combined test of wine, that is California wine, coca and cola tannins?

A. Not by putting them together in that way. I have gotten the resultant ferrichloride reaction with No. 5 and with the finished product or syrup.

Q. Did you note that in No. 5 and in the finished syrup there is used, there is found rather, as your most recent analysis show a tannin of the California wine, of the cola and of the coca in combination?

A. I have identified the presence of cola and the presence of coca by the tannin but not the California wine.

Q. You know there is a percentage of tannin in California wine?

A. I say it is a trace.

Q. That means that you can detect it—

A. It produces a slight turbidity—there are figures on California wine, giving the tannin in Leach's book on Investigation—I would like to have that referred to if you choose—the amount of tannin contained in white California wine is less than 1/10th of one per cent.

Q. On the other hand the amount or percentage of their wine is practically two per cent?

A. You mean in red wine?

Q. Yes?

A. Probably it rises sometimes to two per cent.

Q. And by that you mean extractive matter?

A. Well, I suppose that would cover evtractive matter as well as tannin—as well as tannin I say; in that high percentage the analysis quoted in Leach for read wine of California, the figures are not as high as two per cent.

Q. The tannin is not the extractive matter is it?

A. Tannin may be called extractive matter in making up the summary—if you can't separate it, it is a part of the extractive—

Q. Isn't it true that the total extractive matter in the red wine is in excess of two per cent?

A. I don't know about that.

Q. What do you know about white wine, what is the total extractive matter there?

A. I will have to refer to Leach's book; I can give you the figures from that.

Q. Do you know of your own knowledge? Have you made any experiments to determine what that is?

A. I have not determined the percentage of California wine in either case myself.

Q. What is the percentage of tannin in coca-cola?

A. I don't know.

Q. What is the percentage of tannin in coca?

A. I don't know.

Q. What is the percentage of tannin in either the white or red California wine?

A. I could give it by quotation of the table of analysis; I don't know of my own personal knowledge.

Q. What effect does the concentration of aqueous tannin have on the behavior of the reagents that precipitate the tannins?

A. Well, in many cases in strong solution, in so-called tannin solutions used for leather making there is quite an amount of soluble—

Q. (Interrupting) I am not talking about those strong enough to tan leather, but those found in coca-cola what

is the effect of these reagents that you find in that case?

A. I do not think that the dilute soutions that were obtained in these infusions result in any decomposition of tannin.

Q. Doctor, is there also a method of isolating one tannin from another tannin in merchandise No. 5 or in the Coca Cola syrup, I mean to say assume that there is in there a tannin of the California wine, a tannin of cola and a tannin of coca?

A. Do you ask as to what I have done in the way of isolating?

Q. I ask you whether or not any method of isolating or separating the three?

A. No method as to making quantative separation, that I feel satisfied of being in the mixture; I have tried to identify tannin of each material in No. 5 by comparative tests.

Q. Well now, how much did you find of the California wine tannin in merchandise No. 5?

A. I did not find any in figures at all—and I got no test that would be to my mind sufficient to show there was any California wine tannin there.

Q. How much did you find of the cola tannin in there?

A. I have no figures at all.

Q. How much did you find of the coca tannin?

A. I said I had no figures on either of them.

Q. Of the total combination what did you find in percentage?

A. I didn't find the percentage of tannin—I merely got the qualitive reaction.

Q. Well now, if you were capable and I believe you are capable of doing that kind of work, and it is possible to do it, why didn't you determine the percentage of these tannins relatively or at least the whole?

A. For this simple reason: Both of these are vegetable materials—they are of very complex composition and even elminiating the coca leaves you have left after that a great deal of extractive matter, that is partly resinous and partly undertermined vegetable character, and only a part of it is tannin, and I do not know of any method by which you could extract the coca tannin in the pure state from the coca extractive matter, and the same would apply to the cola nut although the cola tannin has been extracted in more or less pure state from fresh cola nuts by Dr. Prescott, of Ann Arbor.

Q. Haven't all of these tannins been estimated and determined by scientific analysis—don't you know that as a matter of fact?

A. I do not know that; I don't think they have been.

Q. Do you know that that has been done at Ann Arbor, Michigan?

A. The cola tanning has been extracted from fresh cola nuts by Doctor Prescott, but whether it is chemically pure is a matter of doubt.

Q. Has not the percentage been determined and is not that the method for determining what cola the tannin has?

A. I don't know of any such method.

Q. What is the difference as to the cola content between the caffeine derived from coffee and that which is derived from tea?

A. The caffeine content?

Q. Yes.

A. The caffeine of tea is in larger amounts.

Q. I know, but I ask you when you come to the analysis of a sample like Coca-Cola syrup, can you tell from that product whether or not the caffeine therein came from coffee or tea?

A. No, sir.

Q. Did you separate the tannin in those different infusions that you had, or did you work with the entire decoction?

A. I worked with an aqueous decoction after it was filtered.

Q. What other matters were in there aside from the tannin?

A. Undoubtedly there are some extracted matters besides the tannin, but a good deal was filtered off.

Q. What method did you adopt as to the filtering process in filtering these tannins?

A. In filtering these tannins?

Q. Yes.

A. These infusions were simply filtered on a plain filter.

Q. That means the character of paper or strainer?

A. It means they were filtered on plain filtering paper as distinguished from a vacuum or any other kind of a filter.

RE-DIRECT EXAMINATION.

BY MR. HIRSCH:

Q. In this report which you made in 1907, did you make any special test to ascertain the tannin?

A. I did not at that time. I got no evidence in the course of the analysis and I made no special test as there was no evidence of any notable quantity.

Q. Read the last paragraph of that letter and tell us

what the words "these decoctions" refer to.

A. The last sentence I see, bears somewhat a different meaning from that which I supposed it had. I said the same kinds of coca-cola, referring to the finished product, is entirely free from tannin acid in these decoctions. I got no astringency that was recognizable in the Coca-Cola, and I pronounced it free from this tannic acid in these decoctions.

Q. What decoctions?

A. That is in reference to the comparison with the tea above. I called attention to the distinction between Coca Cola and the astringency of tea and coffee. That is the obvious meaning of that last paragraph.

RE-CROSS EXAMINATION.

BY MR. MILLER:

Q. That means that you found no tannins at all in this decoction?

A. No, sir; they had no astringency.

Q. Could you tell us—I should have probably have asked this on my first cross-examination—what was the total tannin that you found in Merchandise No. 5?

A. I did not determine the tannin quantitatively.

Q. Can you tell us as to the total tannin that you found in Coca-Cola syrup?

A. No, sir.

The Court: He has said several times that he made no quantitative analysis of that.

Mr. Miller: I do not refer to any particular one but to all, did he determine the quantity.

The Court: He said no to that question several times.

BY MR. MILLER:

Q. Did you make your tests on the entire mixture or on the separated tannins that you refer to?

A. In which case?

Q. In any of the cases.

A. The comparison I was reading in detail was on two infusions made separately, one from decocainized coca leaves and the other infusion from the ground cola nut. Those were entirely distinct.

Q. Then, the Coca-Cola at first—that was made on that same plan too?

A. That has been made in the previous part of my work, and I got the same reaction in the Coca-Cola syrup and in No. 5 that I found in the case of the coca leaf infusion.

Q. How did you isolate the tannin from the Coca-Cola

syrup?

A. I did not isolate it.

Q. How did you get the colored reaction from the tannins in Coca-Cola syrup if you didn't isolate the tannins?

A. It is possible to get a color reaction without the isolation of it. It is very distinctive.

(Witness Excused.)

CHARLES H. RECKEFUS,

the next witness called on behalf of the claimant and intervenor, the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION.

BY MR. SIZER:

Q. Where do you live?

A. Philadelphia, Pennslyvania.

Q. What is your profession?

A. Physician.

Q. How many years have you practiced as a physician?

A. Eighteen.

Q. I want you to state if you have had any experience with the use of Coca-Cola as a beverage?

A. I have since 1893. I have never drunk less than eleven months in the year since 1895 than six glasses and my wife has been drinking Coca--Cola since 1895 and I should say probably four glasses, and I have two children who have even taken it since they were three years of age.

Q. What effect has the use of the Coca-Cola had on your health—what was the comparative condition of health before taking and since?

A. When I began taking, I weighed 158 pounds and now I weigh 172. Whether that was due to Coca-Cola or other things, I am not prepared to say.

Q. Has the effect of Coca-Cola in any way affected your health or injured you in any way?

A. Not in the least.

Q. On the other hand, has it not been beneficial?

A. I think it has been very beneficial.

CROSS-EXAMINATION.

BY MR. MILLER:

Q. Your chlidren take it about like children, in moderate doses?

A. I must say I have no knowledge of any other children who take it. They take one or two glasses a day. We have it in the house and can have it if we want it.

(Witness excused.)

DR. F. K. BOLAND,

the next witness called on behalf of the claimant and in-

tervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION.
BY MR. SIZER:

Q. State your place of residence and occupation.

A. I live in Atlanta; I am a practicing physician.

Q. How many years practice?

A. Eleven years.

Q. Did you assist Doctor Roberts and Doctor Paullin in making the examinations they testified about yesterday?

A. Yes, sir.

Q. In your practice in Atlanta and among your acquaintances, are you not thrown in contact with people who habitually use Coca Cola?

A. Yes, sir.

Q. Have you observed the effects of the use of it?

A. I have observed more an absence of effect than effect.

Q. Have you ever known of any case in which any disease or impairment of health, either mental or physical has resulted from the use of Coca Cola?

A. No, sir.

Q. Have you noticed the custom of children with respect to drinking Coca Cola?

A. I do not think I ever saw a child take Coca Cola more than one time in my life.

Q. Have you observed the children who go into soda water fountains and take a drink?

A. Yes, sir.

Q. You personally use Coca Cola or other caffeine-containing beverages?

A. Yes, sir.

Q. How much Coca Cola do you drink?

A. About one glass a day on an average, and about two cups of coffee daily.

Q. And have done that for how long?

A. I have been drinking Coca Cola since 1893, and drinking coffee ever since I can remember.

Q. Can you say from your observation of the use of it whether Coca Cola is a habit-forming drink?

A. I think not.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. How long have you been drinking Coca Cola?

A. I think since 1893. That is the first time I remember.

Q. You didn't have occasion to observe as to the con-

sumption of Coca Cola except that you pass casually in and out of drug stores?

A. No, sir.

Q. How old are you?

A. Thirty-six.

(Witness excused.)

DR. RAYMOND WALLACE,

the next witness called on behalf of the claimant and intervenor, The Coca Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,

BY MR. SIZER:

Q. What is your age and occupation and where do you reside?

A. Thirty-five years of age; reside in Chattanooga, practice medicine.

Q. How long have you been practicing in Chattanooga?

A. For eight and a half years.

Q. Is Coca Cola sold and consumed extensively in Chattanooga?

A. I should say that it is.

Q. Have you any occasion among your acquaintances and patients to observe the use of it?

A. Yes, sir.

Q. Have you ever known of any case of injury or impairment of physical or mental health resulting from the use of Coca Cola?

Mr. Miller: I object to that. He is not qualified to speak mentally.

The Court: Ask him a little fuller on that.

BY MR. SIZER:

Q. On the health generally then?

A. No, sir; I have never seen any deleterious effects.

Q. Have you had occasion to observe the habits of children with respect to Coca Cola?

A. I never observed any child take it except one, and that was not as a patient but simply a child in a family who were friends of mine.

Q. Have you observed children taking their drinks at soda fountains?

A. Yes, sir.

Q. Is it not true that they usually prefer some other drink than Coca Cola?

Mr. Miller: We object to that.

The Court: I sustain the objection.

BY MR. SIZER:

Q. From your observation of the use of it, I will ask

you whether Coca Cola is a habit-forming drug?

A. I don't think it is.

Q. In moderate quantities, or in the quantities in which you have observed it consumed, state whether or not it is beneficial.

A. It is.

Q. Do you personally use any caffeine-containing beverages?

A. I take both tea, coffee and Coca Cola.

Q. How much do you use a day?

A. It varies; some days I do not drink any and some days two cups of coffee and two or three glasses of Coca Cola and a cup of tea, on an average one glass of Coca Cola for the past seven or eight years besides coffee.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. When you say it is beneficial, do you mean to the Coca Cola Company or to the individual who drinks it in moderate quantities?

A. To the individual who drinks it in moderate quantities.

Q. Is Doctor Hare's book a standard authority and do you recognize it as such on the effect of caffeine on the human system?

Mr. Sizer: We have not qualified this witness as an expert. Doctor Hare's book has already been gone into with others.

Mr. Miller: I thought you asked him about his experience as a physician?

Mr. Sizer: No, I asked him about his personal knowledge.

Mr. Miller: Limited to the people he saw in the drug store?

Mr. Sizer: I didn't limit it.

Mr. Miller: What was it. I want to know. I want to know how far I can go without making him my witness.

Mr. Sizer: I asked him to testify as to his observations on the people that he has seen and come in contact with.

BY MR. MILLER:

Q. Didn't you see girls and boys come into town every morning when you were about drug stores, don't you see them swarming over to Loveman's and Miller Brothers' and calling for Coca Cola like bees around honeysuckle?

A. Yes, sir.

Q. And they call for it by the name of "coke" and "dope" and various other names like that, don't they?

Mr. Sizer: I object on the ground that we have already shown Coca Cola is not sold under the name of "coke" or "dope" by the company manufacturing it and the manner in which it is called for by others is not competent.

The Court: I overrule that objection.

Mr. Sizer: I thought you overruled it before because we had not shown that we were not responsible for that designation. Please note an exception.

The Court: That may be done.

BY MR. MILLER:

Q. Is it not called for promiscuously under the name of "dope" and "coke" and "Coca Cola"?

A. And numerous other appelations.

Q. Numerous other appelations?

A. Yes, sir.

Q. And these boys and girls that work in the department stores do come in and rush right in to get it the first thing?

A. I have not noticed them rush in or they get it the first thing in the morning but I see them drinking it like I see lawyers and doctors and preachers.

Q. How many preachers do you see standing around drinking Coca Cola?

A. I have drunk it with a good many of the preachers of Chattanooga.

Q. Just give one.

A. I have drunk Coca Cola with Rev. T. S. McCallie at ball games.

Q. Do you know that he was one of those that had been treated for the habit by Doctor McQuillan?

A. No, sir; I didn't know that he had been treated for it.

Q. Is he not a patient of yours?

A. No, sir.

Q. Your observation was not made with respect to testifying in this case but merely casually as you went along, at drug stores?

A. In the last few months I have paid more attention to the drinking of Coca Cola and the effects on my friends and also my patients and men whom *i* knew used Coca Cola.

Q. Were you formerly connected with a Coca Cola bottling company that manufactured Coca Cola?

A. Yes. At one time I owned a little stock in a bottling company organized in Galveston, Texas, and which because of mismanagement, failed.

Q. They were engaged in the handling of Coca Cola?

A. Yes, sir; bottling it.

Q. Now, about this matter of H. Gibson O'Neal, were you not reprimanded by the medical society in connection with Dr. H. Gibson O'Neal's treatment?

A. No, sir; emphatically not.

Q. Did you receive a reprimand from the medical society here in that connection, or in any other connection?

A. I have in another conection and I shall be glad to explain it.

Q. Tell us what the medical society reprimanded you for.

A. I shall be glad to explain that. I had a patient I do not expect it will be necessary to give the woman's name. She was taken ill very suddenly with an acute pain in the abdomen and they called for me at my home. I had operated on her previously and had waited on her sister at her home in a case of confinement previous to this a few months.

They called me in the morning to attend her and I was on my way to my office and they were unable to get me. A lady who was in her apartments at the time suggested that she call Dr. West and Dr. West was right across the street from this lady's home and they called him. He came in and attended her that forenoon and again in the afternoon and pronounced the case one of appendicitis and treated her with enemas and along the line for appendicitis. They called Doctor West in the evening and were unable to get him. They 'phoned over to Doctor West's house and they were told that he was out of town. They then telephoned me and said over the telephone that this lady had a case of appendicitis and for me to come at once as she was suffering terribly. I went there and found her in a cold, clammy perspiration, very rapid pulse, 160; vomiting, and they were treating here by giving her another enema. I inquired what they were doing that for and they said: "We tried to get you this morning and couldn't and we got Doctor West," and I asked them what was his diagnosis and they said Doctor West said it was appendicitis.

I inquired into the matter and I found that it was a ruptured tubal pregnancy and her abdomen was filled with blood. I said immediately she must be taken to the hospital and operated upon, and I removed her and I had a conference with Doctor Boland and he agreed with me and assisted me in the operation.

After six hours we opened the abdomen and found a ruptured tubal pregnancy and probably a quart and a half of blood. We sewed her up and treated her and she

made an uneventful recovery.

That was on Tuesday—or Wednesday, and on the following night when I arrived at the medical association I was handed a slip and asked if I knew anything about it and I said no and I found the following:

"Gentlemen of the Chattanooga and Hamilton County Medical Association:

I desire to prefer charges of unprofessional conduct against Doctor Raymond Wallace on the following counts:

1.—Unsugical conduct in having operated upon a case of ruptured tubal pregnancy in a condition of shock.

2.—Ungentlemanly conduct, having abused me to the family."

And there was a third count, of less importance than those and I have forgotten what it was. The matter was taken up by the Board of Censors of the Medical Society and very thoroughly investigated at a cost of about fifty dollars for stenographic fees and witnesses and other things, and they reported back to the Medical Society and freed me of all the charges except one point: They maintained that the next day after I had operated on the woman I should have called Doctor West in consultation. I still disagree as practically all of the members of the Medical Society do, that that was an exceedingly foolish request inasmuch as Doctor West had made a wrong diagnosis in the first place and precipitated the trouble by improper treatment.

Q. And in the meantime the patient died?

A. In the meantime the patient got well.

Q. You said she made an uneventful recovery; what did you mean by that?

A. The patient got well.

The Court: I hope there will be no further cross-examinations of this kind.

Mr. Miller: I should not have done it except for the examination of Doctor McQuilian on this subject.

RE-DIRECT EXAMINATION,
BY MR. SIZER,

Q. Mr. Miller asked you about the boys and girls at Loveman's going to the soda fountain and getting Coca Cola. What did you mean by that?

A. I never noticed any evidence of poison.

Q. I said: "Boys and girls."

A. Oh, I beg your pardon.

Q. What were their ages?

A. Sixteen to fifty; the employes in the stores.

Q. Are you connected with any Coca Cola bottling business at this time?

A. No, sir; I have not been for two years and was only then for two months.

Mr. Miller: How many boys and girls ten years and up in the department stores? Are there not a great many?

The Witness: Some, but I do not know the number.

BY MR. SIZER,

Q. Do you know any of the age of ten years who drink Coca Cola?

A. I have not seen them. That is the reason I did not include them.

Mr. Miller: There is one question that I want to ask Doctor Sattler if he is going home this evening.

(Witness excused.)

DR. SAMUEL P. SATTLER,

recalled as a witness herein, testified as follows:

RE-CROSS EXAMINATION, Continued,
BY MR. MILLER,

Q. What was the quantity of Coca Cola syrup you used for making the iron chloride, or ferri-chloride as you term it, on the other test you made?

A. Four hundred cubic centimeters.

Q. Did you add iron to that?

A. I do not remember the stage at which the test was made. I think it was after the chloroformic extraction when I had the aqueous liquid concentrated down and then made the test. I think that was the time.

Q. Were sugar and caramel in there at that time?

A. I am not quite clear but I think that I made the chloroformic extraction and after that concentrated it down and took a little bit of water from the residue and took an infusion or solution made in that way by filtering off and tested that.

Q. Does that mean that the sugar and caramel were or were not in the infusion you took?

A. I do not think there was any sugar in it because it was a very thin solution that I had at that stage.

Q. How about the caramel?

A. There may have been possibly some.

Q. How did you get rid of the sugar in that four hundred cubic centimeters?

A. I shall have to refer to my notes to give you an accurate answer on that point.

Q. Are you clear as to how that was? I want to get

the fact in the record if you are going to be here tomorrow.

A. I shall be here to-morrow and I will answer the question.

(Witness excused.)

Mr. Sizer: We will now read some depositions.

Mr. Candler: I will now read the following deposition of Dr. C. J. Gooding:

"C. J. GOODING,

the first witness, of lawful age, duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. McALLISTER:

Q. Where do you live, Doctor?

A. In Knoxville, Tennessee.

Q. What business are you in?

A. Druggist.

Q. How long have you been engaged in the drug business?

A. Forty seven years.

Q. And how long have you been in that business in Knoxville?

A. Thirty-six years.

Q. Thirty-six years?

A. Yes, sir.

Q. Now, state whether or not, Doctor, you operate a soda fountain in connection with your drug business?

A. I do.

Q. What drinks do you sell, the principal drinks, at your soda fountain?

A. Coca Cola.

Q. How long have you known the drink, Coca Cola, Doctor?

A. Well, about eighteen years.

Q. And how is that drink served at your fountain?

A. Diluted with carbonated water.

Q. And what is diluted with water?

A. The syrup.

Q. What is it that is diluted?

A. The Coca Cola syrup.

Q. The syrup?

A. Yes, sir.

Q. Where and by whom is the syrup made, Doctor?

A. In Atlanta, by the Coca Cola Company, in Atlanta, Georgia.

Q. And how long have you known of Coca Cola?

A. About eighteen years.

Q. In what proportion do you mix the syrup with the carbonated water at the fountain?

A. One ounce to seven, that is it fills an eight ounce glass.

Q. One ounce to seven of what?

A. One ounce of Coca Cola to seven of carbonated water.

Q. State whether or not, Doctor, there has ever been to your knowledge any other drink placed on the market known as "Coca Cola" except that made by the Coca Cola Company in Atlanta, Georgia?

A. Not that I know of.

Q. Now, please state whether or not there has been any other substance, beverage, food product of any kind, known as "Coca Cola" placed upon the market within your knowledge other than by the Coca Cola Company, of Atlanta, Georgia?

A. Not to my knowledge, no.

Q. About how many gallons of Coca Cola syrup a year do you handle, Doctor?

A. From seven hundred and fifty to a thousand gallons.

Q. What effect, if any, do weather conditions have upon the sale of Coca Cola?

A. Well, they are not as great in cold weather as they are in the summer time.

Q. What has been your observation as to the number of glasses of Coca Cola a day an average man who drinks Coca Cola at all will drink?

A. Well, from one to two, possibly three.

Q. You say one or two?

A. Yes.

Q. What has been your observation, Doctor, as to whether or not Coca Cola creates in a person who drinks it a craving for increased quantities or number of glasses of Coca Cola?

A. Well, I have never noticed any.

Q. You have never noticed any?

A. I have never noticed any desire for it especially.

Q. Doctor, to what extent do children drink or call for Coca Cola?

A. I have no children to drink Coca Cola at my fountain.

Q. I do not mean, of course, doctor, you understand, to refer to your children?

A. Well, I have no children.

Q. Yes. Now, to what extend has Coca Cola been advertised during your acquaintance with it?

A. Very freely.

Q. Very freely, you say?

A. Yes, sir.

Q. About what proportion of the drinks sold at your fountain, Doctor, does Coca Cola form?

A. I suppose of my drinks it would probably be about two-thirds.

Q. Two-thirds of your drinks are Coca Cola?

A. Yes, sir.

Q. Now state whether or not there has ever been a case within your knowledge of any person being injuriously affected by drinking Coca Cola?"

Mr.Miller: I object to that question and answer. He has not qualified.

Mr. Sizer: He has been in business eighteen years.

The Court: I overrule the objection.

"A. None whatever.

Q. Do you drink Coca Cola yourself, Doctor?

A. I do.

Q. Now, what has been your experience as to whether or not the drink Coca Cola creates a craving or desire for increased consumption of Coca Cola?

A. None whatever.

Q. How long have you been drinking it?

A. Eighteen years.

Q. How many glasses do you drink a day?

A. Never over two; I average from one to two a day.

Q. State whether or not, Doctor, this drink or beverage known as "Coca Cola" has ever been known under any other name?

A. Well, sir, not to my knowledge.

Q. Doctor, I believe you stated awhile ago that you did not sell as much Coca Cola in cool weather as you did in warm weather?

A. No, sir, I do not.

Q. Now, about what is the difference, about how much would it vary?

A. I suppose it might vary, probably, well, it depends a great deal on how severe the cold is—very cold weather—we don't serve it hot, and therefore they don't drink as much beverage in the winter as in the summer, but I have never studied exactly how much, but probably one-half to three-fourths, probably I say.

Q. Depending upon the intensity of the cold?

A. Yes, of the cold weather.

CROSS-EXAMINATION,
BY MR. MILLER,

Mr. Miller: Reserving exceptions as to irrelevancy and incompetency of the evidence of this witness, the government cross examines as follows:

Q. Now, you say that your principal sale of soft drink beverages is Coca Cola?

A. Yes, sir.

Q. What proportion, relatively, of other soft drinks combined do you sell as compared with Coca Cola?

A. Well, about a third.

Q. You sell then about one part or one fourth of soft drinks, of all others combined, and three-fourths of Coca Cola?

A. Yes, sir.

Q. Now, as a druggist what is your explanation of that phenominal disproportion between Coca Cola and the other soft drinks combined?

A. Well, advertising I think principally.

Q. Then you think it is due to advertising?

A. Yes.

Q. Have you not signs suspended over your fountain of other soft drinks like that of Coca Cola?

A. Not near so many.

Q. But you have them in plain view from your fountain?

A. Just a few only.

Q. Well, you don't have but a few of the Coca Cola signs suspended around there do you?

A. No, sir.

Q. How was that?

A. No, sir.

Q. Then the mere fact of advertising when you have a few of both kinds there would not account for this remarkable increase in the sale of Coca Cola would it?

A. You mean in increase over the others?

Q. You advertise both kinds, you say?

A. Do I understand you to mean an increase over the other drinks?

Q. Yes.

A. Well, I have a reputation on Coca Cola which probably might cause it to run over any other stores.

Q. You have a reputation on Coca Cola?

A. Yes sir, of selling Coca Cola straight, Coca Cola, and a great number of my sales are due to that.

Q. What do you mean by straight Coca Cola as compared with Coca Cola generally?

A. Coca Cola is in some stores diluted and changed, so they say, I don't know but that is the reputation.

Q. Some stores here in Knoxville?

A. I don't know where they are; they say mine is better than anybody else's; why it would be, I don't know; I know that I sell it straight as it is received from the

Coca Cola Company.

Q. And is this reputation that you have heard about the changing of it confined to this locality or is it generally speaking?

A. I do not know anything only what I have heard in the city.

Q. In this city?

A. Yes sir, in this city.

Q. What sort of an adulterant do other people put in it?

A. I don't know sir.

Q. You don't know?

A. No, sir.

Q. Now, you say you have a reputation for selling Coca Cola straight and pure. Don't you sell your other drinks straight and pure also?

A. Yes, sir.

Q. Then, you have a reputation, or you attempt to maintain one, for selling straight and pure drinks?

A. Yes, sir.

Q. What sort of glasses do you use in dispensing Coca Cola and other drinks?

A. An eight ounce glass.

Q. How do you determine what proportion of the mixture is Coca Cola syrup and what proportion is the carbonated water?

A. We have a guage that we draw it by.

Q. What is that gauge, what does it consist of?

Q. Consists of a part of the soda fountain.

Q. How is that?

A. A pump from the soda fountain, or in the soda fountain. That pump is sort of an automatic arrangement that you press with the trumb, and it permits a certain quantity of Coca Cola or syrup of any other beverage, to flow into the glass.

Q. Now you can press that gauge once and a certain quantity will flow, and you can press it back and a smaller quantity will flow, and so on, can't you?

A. Yes, sir.

Q. So it is possible by means of that guage to fill the glass with Coca Cola, or to fill it half full or a third full?

A. It is only gauged to serve one ounce by one pressure.

Q. I understand, but that depends on how many times you press the guage as to what quantity of Coca Cola you get into that glass,

A. Yes, sir.

Q. And that is left entirely to the fountain server, to

the boy who is serving the customer.

A. Yes, sir.

Q. And if a customer comes in and calls for a "double header," so to speak, you give him two ounces instead of one?

A. He don't do it if I know it.

Q. But you are not there all the time?

A. No sir, but he is under my command.

Q. Then you command your clerk not to serve what is known as a "double header" or double quantity, but to serve only in single quantities of one ounce?

A. Yes, sir.

Q. Now, why do you give him that instruction?

A. Because I am in business for a profit, not to give my money away to my customers; when a man comes into my house to buy anything I expect to make something on him.

Q. Well, if a man is willing to pay double price you would be willing to serve him a double quantity?

A No, sir.

Q. And why not?

A. Because I do not think that a man who comes into my place for a drink is entitled to that much.

Q. And why don't you think he is entitled to that much? Why is he not entitled to a double dose?

A. If a man came into my store and wanted a dose of laudanum for the stomach ache, do you think I would give him two doses simply because he wanted to pay for two doses?

Q. But if it was harmless it would seem like you would want to serve double quantity, if you got the price for it?

A. Well, you don't look at it like I do. I think that a man can take too much of anything.

Q. You do think that a double portion, or in excess of an ounce of Coca Cola syrup might prove harmful?

A. Too much of anything is harmful.

Q. Do you say that in excess of an ounce of Coca Cola taken at one time might prove a harmful dose?

A. I don't know whether it would or not.

Q. You don't know how that is?

A. No sir.

Q. But your suspicions are so well founded that it might be that you instruct your clerks to serve only one ounce?

A. I do that simply as a matter of profit; that is the quantity that I allow him to sell.

Q. But you say you would not allow him to serve two

ounces if the man should offer to pay for a double quantity?

A. I don't do that with any of my drinks.

Q. How was that?

A. I don't do that with any of my drinks.

Q. Well, I understand you do not. Now, what is the reason that you do not?

A. Because I think that when a man gets eight ounces of a drink at a time that is enough for him.

Q. But if he gets eight ounces of a drink, two ounces of Coca Cola syrup in it, is that too much?

A. He would be getting sixteen ounces which would be getting a pint of liquid.

Q. But he might have two ounces of syrup and six ounces of water?

A. He don't get it at my place.

Q. And why not?

A. Because it is not my rule and not my way of doing business.

Q. You say you have not heard of this mixture being sold or called by any other name except "Coca Cola"? Now, isn't it a fact that it is very frequently known and termed "dope," and when a customer comes in and calls for "dope" don't you know exactly what he wants, that it is Coca Cola?"

Mr. Sizer: Without renewing our objections all through to this line of questions about "dope" and "coke" I want them to be considered as put in.

The Court: Yes, it is considered that objection is made to all of that line and the objection is overruled with exception.

"A. Yes sir, it is Coca Cola.

Q. So that the name of this drink is Coca Cola or dope, as the case may be?

A. Well, I think that dope business is just more as, or just simply to say, "Coca Cola," and instead of saying "Coca Cola" they say "dope."

Q. The people who drink it and your customers when they come in and call for "dope" your force understands that he means "Coca Cola."

A. Yes, sir.

Q. You don't mean to say that "dope" is a distinctive name for Coca Cola, do you or not?

A. No , sir. There are other dopes.

Q. There are other dopes?

A. It is just simply a name that it has got, instead of saying "Coca Cola" they just say "dope."

Q. What are some of the other dopes that you speak

of?

A. Morphine, laudanum, cocaine, and a whole lot of things.

A. But the only dope that you sell at the fountain is Coca Cola?

A. Well, it goes by the name of "dope."

Q. Now, when a customer calls for "dope" why don't you sell him morphine or something of that sort or some of the other dopes?

A. That is against the law.

Q. And how was that, Doctor?

A. That is against the law.

Q. Why is Coca Cola called "dope"?

A. I don't know, sir.

Q. Now, Doctor, if a customer would come in and ask for two glasses or one glass, and then another glass right after it of ordinary soda water, or two dishes of ice cream why you would not object to your clerk selling him that?

A. Of ice cream, no sir, I would not of ice cream.

Q. And if he asked for two glasses of lemonade, you would not object to selling him that?

A. Never sold two glasses of lemonade that I know to one party.

Q. But if a person asked for it you would not offer any objection to him having it?

A. I don't know whether I would or not; it depends on the weather a great deal.

Q. If he asked for two glasses of strawberry soda water or lemon soda water, you would not object to his having that?

A. I might not on one occasion, but if he made a practice of it I would.

Q. But you would object to serving two glasses of Coca Cola to the same person, one after the other?

A. He never called for two —

Q. (Interrupting) But didn't you state that you would object to it?

A. Yes, I would; I don't think a person needs it at all.

Q. There is not any gauge on the glasses that you use at your fountain for dispensing Coca Cola?

A. No, sir.

Q. Did I understand you to say that Coca Cola has never been served at your fountain to children?

A. Not that I know of; I have never seen any children drink any of it there.

Q. Do you mean by that that you would not let it be served to children?

A. No, I didn't say so.

Q. How was that?

A. I didn't so say.

Q. What do you mean by that?

A. I said that children did not drink it there and did not call for it.

Q. Well, how do you account for the fact that children do not call for it and adult persons do?

A. I don't know, sir.

Q. And you can't explain after your eighteen years of experience?

A. No, sir.

Q. Your fountain is patronized by school children?

A. Very little.

Q. What portion of the city is your place of business in—is it on Gay Street?

A. Yes, sir.

Q. In a populous portion of the town?

A. Yes, sir.

Q. You do not have any school children, shop girls or anybody like that?

A. Very few.

Q. Who patronize your store?

A. My store is in the middle of the block and we don't have a great many children come in there, especially school children.

Q. Are there any shop girls that patronize your place of business?

A. There may be, sir, I don't know any of the shop girls; I attend strictly to my business; I couldn't tell who they were.

Q. Do they have to stand around the fountain to receive Coca Cola or do you have tables or chairs provided for them?

A. No tables and no chairs.

Q. Do you have stools around the fountain?

A. We have simply a settee where they may sit for just a few minutes.

Q. Now, you stated, I believe, that you would not serve two glasses of Coca Cola to a person in succession, that is one after the other. May I ask you now how many glasses you would serve to the same person during a day?

A. I would not limit them to a day, I couldn't say how many I would serve; as I say I have people who come there and drink not over three glasses a day, two or three glasses a day that I know of.

Q. That you know of?

A. Yes; I do not see everybody that comes to my soda fountain.

Q. Where do you stay? What is your position in the store?

A. I am manager and prescription clerk.

Q. And you are cut off from the fountain by your partition behind which you mix prescriptions?

A. No, not all of the time.

Q. But the major portion of the time?

A. I couldn't say that I was. I have a desk out in front of the partition that I occupy a great deal.

Q. Now, out at your desk you could not observe what took place at the fountain?

A. Not all of the time.

Q. Except in a general way?

A. Just in a general way.

Q. You do not pretend to say that nobody buys over three glasses of Coca Cola at your place a day?

A. No, sir, I couldn't state it positively.

Q. Now, I will ask you as a prescriptionist why it is you would not serve or would not permit your clerks to serve two glasses of Coca Cola or two ounces of Coca Cola to the same individual at one time?

A. Simply because I don't want to do it; I don't know that I have any special objections to it except I think a man has enough.

Q. Do you mean to say that one ounce of Coca Cola syrup at a time is enough?

A. I think that eight ounces of water is enough.

Q. Well, if you put two ounces of Coca Cola in six ounces of water that makes eight ounces of liquid?

A. I don't put in two ounces of Coca Cola.

Q. But, if you did, he would only get eight ounces of the mixture?

A. Yes, sir.

Q. And you stated awhile ago that if he would pay the double price you would serve it to them?

A. No, sir.

Q. And why not serve it if they pay the price?

A. Because it is my principle.

Q. Well, what is the reason or basis for that priniple of yours?

A. I don't know, just an idea I have got in my head I don't serve it; I don't give over two ounces of the ordinary syrup, or an ounce and a half, I don't double up the doses.

Q. But why do you hold to the idea that two ounces of Coca Cola syrup ought not to be served in six ounces of carbonated water?

A. I simply stated that I thought a man had enough in one glass; eight ounces of water is sufficient for one

person in my idea; I don't consider what anybody else —

Q. (Interrupting.) But that does not answer the question—if you have two ounces of Coca Cola syrup in six ounces of carbonated water, or say one and a half ounces of Coca Cola syrup in six and a half ounces of carbonated water, then you only have eight ounces of the mixture—why is it that you say to your clerks they must serve only one ounce of Coca Cola syrup in these eight ounces of mixture?

A. I have stated that I do it for a profit, and that I don't serve but one ounce to a glass. I do that as a matter of profit.

Q. But you have stated that if a man wanted to pay double price you would not serve two ounces of Coca Cola syrup and I wish to know why?

A. Because I don't want to do it; I have no special reason. That is my principle of doing business.

Q. Now, if you realize a profit from serving one ounce of Coca Cola syrup with seven ounces of carbonated water, you would naturally get double profit by serving two ounces Coca Cola syrup with six ounces of carbonated water?

A. Well, that may be so.

Q. And why not do that?

A. I am not out for the money like some people are.

Q. I thought you stated it was strictly a matter of profit with you before, and therefore you would not serve two ounces in one drink?

A. Yes, it is strictly for one drink.

Q. Now, Doctor, what is the reason then that you would not serve two ounces of Coca Cola syrup with six ounces of water if a customer wanted to pay double price?

A. Because I do not want to do it; it is not my principle.

Q. And what is your reason for that?

A. I have my own reasons.

Q. And what are your own reasons?

A. Just on the same basis as I would not give a man four ounces of castor oil at a dose.

Q. And why not?

A. Because I don't think he needs it.

Q. And why would you not give him the extra dose of laudanum that you referred to awhile ago?

A. I don't think it would be right to give it to him.

Q. And you don't think it would be right because it would prove injurious to his health?

A. I think if a man gets eight ounces of a liquid in a drink that is all that he needs; he can go somewhere else

and get more if he wants to.

Q. But, Doctor, I have assumed that he was only getting eight ounces of the mixture, and you are increasing the amount of the mixture—I mean I am simply increasing the amount of the Coca Cola in the mixture, and you say you would not let them increase it?

A. Yes, sir, that is right I would not.

Q. Because it is against your principles.

A. Yes, sir, because it is against my principle.

Q. And it is against your principles because you think it might have a deleterious effect on his health?

A. I don't know, it might do him good.

Q. Well, would a double dose of laudanum do him good?

A. No, sir.

Q. And for the same reason you would not serve a double dose of the Coca Cola syrup?

A. Well, I do as I please in running my business; I don't ask anybody else to run my business.

Q. Then the facts are that you do not think a double dose of Coca Cola would do him any good?

A. I didn't say so.

Q. But I am asking you under oath if that is not a fact?

A. Well, I don't know whether it would or not.

Q. But your suspicions are so strong in that direction you won't let your clerks serve over one ounce if you know it?

A. My suspicions are not any at all; I have just got that principle of doing business; people come in there for a dose of medicine and I turn them down, and I don't have to give it to them unless I want to—I run my own business.

Q. Now, is that an arbitray rule of yours, the serving of one ounce of the syrup at a time?

A. I don't know whether it is arbitrary or not; it is my principle.

Q. I believe you say that was due to the fact that that was your personal view on the subject?

A. Yes, sir.

Q. Now how many glasses of Coca Cola do you get out of a gallon of Coca Cola syrup?

A. When served to customers, I am supposed to get one hundred and twenty-eight glasses.

Q. You say you are supposed to get that. Is that as a matter of fact about what you do get?

A. I think so, sir; I am not positive on the subject. There is wastage and things of that kind, I couldn't say a barrel would run out exactly fifty gallons in a fifty gallon barrel; there is always a certain amount of wastage

going on that you can't control.

Q. Now, you stated in chief that generally speaking you had not noticed any special craving for Coca Cola. Now, what do you mean by any "special craving"?

A. I mean that I have never noticed anybody that came in there with a rush or anything of that kind, or had to have a Coca Cola immediately—they came in there and I have never noticed my customers take any more than they usually do, one or two or three glasses a day as I say.

Q. You don't know how much they get at other places?

A. No, sir, I don't run somebody else's business.

Q. By your customers you mean a man who patronizes your place regularly, and women, too?

A. Yes, sir.

Q. Well, anybody who comes in with the price can get a glass of Coca Cola at your fountain?

A. Yes, sir.

Q. Whether it be a child or a grown person?

A. Yes, sir.

Q. And what do you mean by "children" when you say children do not patronize your fountain?

A. Well, children I should consider under ten or twelve years of age.

Q. And by children you meant to limit persons to ten years of age?

A. Ten or twelve years.

Q. Now, do you know what is in Coca Cola?

A. I do not.

Q. Do you know whether or not there is any caffeine in it?"

Mr. Sizer: I object to that.

The Court: Objection sustained.

(Reading continued:)

"RE-EXAMINATION,
BY MR. McALLISTER:

Q. Doctor, in reference to the advertising that you were asked about, I believe you stated it was very extensively advertised, or words to that effect. By whom is that advertising or has it been done by, Doctor?

A. By the company.

Q. By what company?

A. The Coca Cola Company.

Q. By the Coca Cola Company?

A. Yes, sir.

Q. And what is the nature of that advertising?

A. Well, it is done in different ways; it is done by ticket, by placards, it is done by signs.

Q. So that in regard to the advertising of Coca Cola you are not dependant upon the signs that you hang over your fountain or your door for the pushing of Coca Cola?

A. No, sir.

Q. Now, Doctor, would you give a man a double portion of chocolate syrup in a drink when he asked for it, or offered to pay for it?

A. I have never been asked for it.

Q. Have you ever been asked for a double portion of Coca Cola syrup?

A. Not to my recollection.

Q. Now, as a matter of fact, would that make a very sweet concoction —

Mr. Miller (Interrupting): I object to the leading form of the question.

BY MR. McALLISTER:

Q. Then, I will as you, would it or not make a very sweet concoction?

A. I would not like to answer that question.

Q. You have never drank it that way?

A. No, sir.

Q. But would you give a man a double portion of any syrup in a drink if he were to ask for it?

A. I would not.

Q. Now, Doctor, you have stated that sometimes people call for it under the name of "dope."

A. Yes.

Q. Now, I will ask you as a pharmacist and as a man who is accustomed to the operation of a soda fountain, whether it is understood by that that Coca Cola contains any opiate?

A. I do not so understand it.

Q. As a matter of fact, is "dope" a slang expression?

A. Yes, sir; that is the way I take it.

Q. You have heard a child called a "kid," have you?

A. Yes, sir.

Q. But you don't understand by that he was a little goat?

A. No, sir.

RE-CROSS EXAMINATION,
BY MR. MILLER,

Q. You know that sometimes you give a larger dose of castor oil or salts or any other drug than you do in other instances, don't you?

A. Yes, sir.

Q. But the dose varies according to the result desired to be obtained?

A. Yes, sir.

Q. Now then, that being so why is it that you would not give a larger dose of Coca Cola than one ounce in eight ounces of mixture, if the customer was willing to pay for it?

A. There seems to be a little difference between a drug and a drink or a beverage.

Q. Well, caffeine is a drug, is it?

A. Sir?

Q. Caffeine is a drug?

A. Yes, sir.

Q. And if you are going only to get eight ounces of mixture, and caffeine is practically harmless, why not give a double dose of caffeine or Coca Cola syrup in the mixture if the customer was willing to pay the price?

A. I don't know what is in Coca Cola.

Q. You don't know whether there is any drug in it or not?

A. I do not.

Q. And if you don't know what is in it—

A. (Interrupting) The Coca-Cola Company never told me what they made Coca-Cola out of.

Q. Now, isn't it true that some patrons like their drinks stronger than others, say, for instance, more acid in it, than others?

A. Yes, sir, they want it.

Q. If they ask, for instance, for a dose—I mean, for a glass, of one kind of soda water, and they want it extra strong, don't you give it to them the way they want it?

A. No, it is my instructions not to give it to them that way, but to give so much, is my instructions.

Q. But you do vary it when it comes to castor oil or anything like that?

A. Yes.

Q. And if they say they want an extra large dose, you give them that?

A. I am the judge of whether they ought to have that much or not.

Q. And you are also the judge as to whether or not they get an extra dose of Coca-Cola syrup?

A. I have a rule to run my soda fountain by, and they get so much for their money.

Q. But you won't sell them double that quantity for double the price?

A. No, sir."

Thereupon the Court, at two o'clock P. M., adjourned until Friday, March 31, 1911, at Nine o'clock A. M.

Exhibit to Deposition of Dr. Kebler.

UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR.
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, GREETING:

THIS IS TO CERTIFY that the annexed is a true copy from the Records of this office of the Certificate of Registration, Statement, Declaration, and Facsimile in the matter of the

Trade-Mark Registered by
The Coca-Cola Company,
January 31, 1893, Number 22,406.
for
Nutrient or Tonic Beverages.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 13th day of November, in the year of our Lord one thousand nine hundred and nine and of the Independence of the United States of America the one hundred and thirty-fourth.

(SEAL.) F. A. TENNANT,
Assistant Commissioner of Patents.

No. 22,406.

THE UNITED STATES OF AMERICA.

TO ALL WHOM IT MAY CONCERN:

This is to certify that by the records of the United States Patent Office it appears that the Coca-Cola Company of Atlanta, Georgia, a corporation organized under the laws of the State of Georgia did, on the 14th day of May, 1892, deposit in said Office for Registration fac-similie of a certain

TRADE-MARK

for Nutrient or Tonic Beverages, and the date of the receipt thereof was duly noted and recorded, that on the 14th day of May, 1892, it deposited therewith a statement, and a written declaration under the oath of Asa G. Candler, an officer of said corporation, copies of all of which are hereto annexed; and the said corporation having made the payment of a fee of Twenty five dollars, and complied with the regulations in such cases prescribed by the Commissioner of Patents, and in all other respects complied with an Act of Congress approved March 3, 1881, entitled "An Act to authorize the Registration of Trade-Marks and protect the same," the said fac-similies, statement, and declaration were duly recorded, and the said TRADE-MARK has been duly registered in the said Patent Office this 31st day of January, one thousand eight hundred and ninety-three and protection therefor will remain in force

for Thirty Years from said date, unless sooner terminated in accordance with Section 5 of said Act.

IN TESTIMONY WHEREOF the seal of the Department of the Interior is hereto affixed this thirty-first day of January, 1893, and of the Independence of the United States the one hundred and seventeenth. Given under my hand at Washington, D. C.

W. E. SIMONDS,
Commissioner of Patents.

TRADE-MARK.

—o—

The Coca-Cola Company.
Nutrient or Tonic Beverages.

No. 22,406. Registered Jan. 31, 1893.

COCA-COLA

Witness:
Geo. E. Freeh.
Rol A. Fitzgerald.

Proprietor
The Coca Cola Co.
per
Lehmann, Pattison & Nexbit,
Attorneys.

UNITED STATES PATENT OFFICE.

The Coca Cola Company, of Atlanta, Georgia.
Trade-Mark for Nutrient or Tonic Beverages.
Statement and Declaration of Trade-Mark No. 22,406.
Registered January 31, 1893.
Application filed May 14, 1892.

STATEMENT.

TO ALL WHOM IT MAY CONCERN,

Be it known that The Coca Cola Company, a corporation organized under the laws of the State of Georgia, and located in the city of Atlanta, Fulton county, in the State of Georgia, and doing business in said city of Atlanta, has adopted for its use a Trade-Mark for a Tonic, Sirup, or Beverage, of which the following is a full, clear, and exact specification.

The said trade-mark of said company consists of the word or words "Coca-Cola." These words have been generally written as a compound word, and in the particular form represented in the accompanying fac-simile, that is to say, with the lower portion of the "C" beginning the word "Coca" extended under the entire work in the form of a dash, and the top of the "C" beginning the word "Cola" extended over the letters following in the form of a dash. Upon the dash of the first "C" said corporation generally has the word "Trade-Mark." While said corporation prefers to form the initial "C's" as just described, and also to form the word as a compound word, yet the word

may be altogether as one word, or separately as two words, and the dashes omitted, without materially altering the character of the said trade-mark, the essential feature of which is the word "Coca-Cola."

This trade-mark was adopted by the privies in title of The Coca Cola Company, about the 28th day of June, 1887, and has been continuously used by them and the said corporation since that time.

The class of merchandise to which this trade-mark is appropriated is beverages, and the particular goods comprised in such class on which it is used by the said company is nutrient or tonic beverages. It is usually affixed to the goods by either affixing it to the bottles, kegs or barrels containing the same, in the form of a label, or by printing or stamping the same thereon, or by blowing the letters in the bottle itself.

THE COCA COLA COMPANY,
BY ASA G. CANDLER, President.

Witnesses:
JOHN S. CANDLER,
WM. A. HAYGOOD.

DECLARATION.

State of Georgia, County of Fulton, ss;

Asa G. Candler, being duly sworn, deposes and says that he is president of the corporation, the applicant named in the foregoing statement; that he verily believes that the foregoing statement is true; that the said corporation has at this time a right to the use of the trade-mark therein described; that no other person, firm or corporation has the right to such use, either in the identical form or in any such near resemblance thereto as might be calculated to deceive; that the trade-mark is used by the said corporation in commerce between the United States and foreign nations and Indian tribes and particularly with Canada, and that the description and fac-similes presented for record truly represent the trade-mark sought to be registered.

ASA G. CANDLER.

Sworn and subscribed to before me, a notary public, this 6th day of May, A. D. 1892.

(L. S.) WM. A. HAYGOOD,
Nortary Public, Fulton County, Georgia.

UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, GREETING:

THIS IS TO CERTIFY that the annexed is a true copy from the Records of this office of the Certificate of Regis-

tration, Statement, Declaration, and Drawing in the matter of the

Trade-Mark Registered by
The Coca Cola Company,
October 21, 1905, Number 47,189.

for

Tonic Beverages, and Syrups for the Manufacture of Such Beverages.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 13th day of November, in the year of our Lord one thousand nine hundred and nine and of the Independence of the United States of America the one hundred and thirty-fourth.

F. A. TENNANT,
Assistant Commissioner of Patents.

THE UNITED STATES OF AMERICA.

To all to whom these presents shall come:

THIS IS TO CERTIFY That by the records of the United States Patent Office it appears that The Coca-Cola Company, of Atlanta, Georgia, a corporation organized under the laws of the State of Georgia, did on the 22nd day of April, 1905, duly file in said office an application for Registration of a certain

TRADE-MARK

for Tonic Beverages, and Syrups for the Manufacture of such Beverages, that it duly filed therewith a drawing of the said Trade-Mark, a statement relating thereto, and a written declaration, duly verified, copies of which are hereto annexed, and has duly complied with the requirements of the law in such case made and provided, and with the regulations prescribed by the Commissioner of Patents.

And, upon due examination thereof, it appearing that the said applicant is entitled to registration of its said Trade-Mark under the law, the said Trade-Mark has been duly registered to The Coca-Cola Company, and its successors or assigns, in the United States Patent Office, this 31st day of October, 1905.

This certificate shall remain in force for Twenty Years, unless sooner terminated by law.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of Washington, this thirty-first day of October, in the year of our Lord one thousand nine hundred and five and of the Independence of the United States the one hundred and

thirtieth.

F. I. ALLEN,
Commissioner of Patents.

TRADE-MARK

—o—

No. 47,189. Registered Oct. 31, 1905.

The Coca-Cola Company.

Tonic Beverages and Syrups for the Manufacture of Such Beverages.

Application Filed Apr. 22, 1905.

COCA-COLA

Proprietor,
The Coca-Cola Company,
By Fred Beall,
Attorney.

UNITED STATES PATENT OFFICE.

The Coca-Cola Company, of Atlanta, Georgia.

Trade-Mark for Tonic Beverages and Syrups for the Manufacture of Such Beverages.

No. 47,189. Statement and Declaration Reg. Oct. 31, 1905.

Application filed April 22, 1905.

Serial No. 2,730.

STATEMENT.

To all whom it may concern:

Be it known that The Coca-Cola Company, a corporation duly organied under the laws of the State of Georgia, and located in the city of Atlanta, county of Fulton, in said State, and doing business at No. 179 Edgewood avenue in said city of Atlanta, has adopted for its use a trade-mark, of which the following is a description.

The trade-mark of this corporation consists of the words "Coca-Cola."

This trade-mark has been continuously used in the business of said corporation and those from whom it derived its title since about the 28th day of June, 1887.

The class of merchandise to which this trade-mark is appropriated is beverages, and the particular description of goods comprised in said class upon which this trade-mark is used is tonic beverages and syrups for the manufacture of such beverages.

The trade-mark is generally displayed on the packages containing the goods by placing thereon a printed label on which the same is shown and by printing or stamping the same thereon or by blowing the letters into the bottles or other containers of the goods.

THE COCA-COLA COMPANY,
BY ASA G. CANDLER,
Its President.

DECLARATION.

State of Georgia, County of Fulton, ss:

Asa G. Candler, being duly sworn, deposes and says that he is the president of the corporation the applicant named in the foregoing statement; that he believes the foregoing statement is true; that he believes said corporation is the owner of the trade-mark sought to be registered; that no other person, firm, corporation or association, to the best of his knowledge and belief, has the right to use said mark, either in the identical form or in any such near resemblance thereto as might be calculated to deceive; that said mark is used by said corporation in commerce among the several States of the United States and all of said States, and between the United States and foreign nations and Indian tribes, and particularly between the United States and the Republics of Mexico and Cuba, and with Canada and the five civilized tribes of Indians; that the description, drawing and specimens presented truly represent the mark sought to be registered; and that the mark has been in actual use as a trade-mark of the applicant for more than ten years next preceding the passage of the act of February 20, 1905, and that to the best of his knowledge and belief such use has been exclusive.

ASA G. CANDLER.

Subscribed and sworn to before me, Z. D. Harrison, clerk of the Supreme Court of the State of Georgia, this the 17th day of April, 1905.

(L. S.) Z. D. HARRISON,
Clerk of the Supreme Court of Georgia.

Chattanooga, Tennessee,
Friday, March 31, 1911.
Nine o'clock A. M.

Court met pursuant to adjournment.

Appearances, same as on yesterday.

CLAIMANT'S EVIDENCE CONTINUED.

Mr. Miller: If your Honor please, I think it might be well to pick up a few dropped stitches as we go along. There were two questions that were asked Doctor Hare on yesterday that do not appear in the transcript as I am informed. One of them was as to whether or not the Zenetz and Allard cases have ever been discredited in any medical literature that he has read. I have a distinct recollection of that question being asked. I remember that positively, and the other question was if Doctor Schmiedeberg did not refer to the Zenetz case. Those questions I think

I asked just as Doctor Hare was leaving the stand.

The Court: I have a distinct recollection about the first but I do not recall the second.

Mr. Miller: That may have been due to the stenographers changing.

The Court: You can recall the witness.

Mr. Sizer: I recollect something was said about that.

Mr. Miller: The next is that after I had asked as to that treatise of Doctor Schmiedeberg, adversary counsel sought to prove by Doctor Hare that a certain paper, which was subsequently prepared by Doctor Schmiedeberg, changed his opinion. I have had that translated and I would like to pass it to your Honor.

The Court: Counsel for the claimant has given me a copy of it.

Mr. Hirsch: The other translation was one that I gave to Doctor Boos and the translations are identical.

The Court: Before ruling, I do not recall exactly the question that was asked in regard to this paper. How do you claim that this is relevant?

Mr. Sizer: For this reason; on cross-examination, counsel asked Doctor Hare if Doctor Schmiedeberg did not in the work he had written, express a certain opinion as to the effect of caffeine, and he was read some extracts from Doctor Schmiedeberg's treatise, which counsel, I suppose, considered contradictory of Doctor Hare's view.

The Court: On what particular points?

Mr. Sizer: I do not recall without having the testimony before me, but it was generally as to the effect of caffeine.

Mr. Miller: One of them was as to whether the Zenetz case had ever been discredited.

Mr. Sizer: That does not bear on that, but it does bear on Doctor Schmiedeberg's opinion.

The Court: I do not recall any specific introduction of any part of Schmiedeberg's work.

Mr. Miller: In his treatise on toxicology, or rather pharmacology, he mentined some of the symptoms noted after the administration of .5 to .6 grams of caffeine by mouth are vertigo, headache, buzzing of the ears, trembling, unrest, sleeplessness, confusion and delirium.

The Court: I remember that extract was read. I have read this matter and I don't think it is competent to be introduced on re-examination. There is nothing bearing on these matters in the extract. It is the opinion of Schmiedeberg as to the quantities of caffeine contained in coffee and tea and Coca-Cola, and it is a matter that can be got before the jury in another form.

Mr. Sizer: We did not ask Doctor Hare to introduce that, but we asked him whether or not in the opinion subsequent to this that Doctor Schmiedeberg had expressed views that confirmed Doctor Hare as to the effect of caffeine.

The Court: I think it would be proper, if it could be shown that Schmiedeberg had expressed an opinion contradictory to that in the authority to which you refer in some public work, but I don't think that the same weight should be given to an opinion contradictory of what is expressed in his work, in a private letter. I don't think the weight should be attached to the opinion of a scientific man expressed in a letter as would be in a published work subject to the criticism of his fellows, and it would be carrying it very far to allow a private letter to be introduced. The publicity of a scientific article has almost the sanctity of an oath.

(This evidence excluded by the court is as follows:)

"OPINION CONCERNING THE CAFFEINE CONTAINED IN COCA-COLA AS REGARDS ITS EFFECTS UPON HEALTH.

By Dr. Oswald Schmeideberg. (Translation by Dr. J. W. Mallet.)

I have been asked by Mr. Harold Hirsch, of General Counsel for the Coca-Cola Company of Atlanta, Ga., to express my opinion on the question whether caffein (caffeine) in the quantity in which it is contained in the Coca-Cola syrup manufactured and put upon the market by the said Company is injurious or detrimental to health.

In the indictment against the Coca-Cola Company it is said, 'The caffeine in this food produce is derived from waste tea leaves, and not from the cola nut.' As regards this assertion it must at the out set be remarked that for the question of the significance of caffeine in its relation to health it is a matter of indifference from what source the caffeine of this 'food product' is derived, whether from tea leaves or from cola nuts, or whether introduced as pure caffeine. For the influence of the latter, in its effects upon health, there is only to be considered the quantity in which it occures in Coca-Cola Syrup.

Caffeine is the constituent upon which depend the significance of coffee, tea and some other food materials. This significance is far more widespread than that of alcoholic beverages. In all parts of the world, coffee, tea and other food materials containing caffeine, such as cola, Paraguay tea and guarana paste are made use of by the most widely different races of mankind, by people professing all forms of religious belief, by men and women, by the young

without special restriction, whilst alcoholic drinks are prohibited to Mohammedans by religious rule, and women and children as well as many men refrain from their use.

Notwithstanding the unparalleled wide distribution of those food materials, cases of illness from their use which can be held to be due to their content of caffeine, are not known. Caffeine, therefore, in the quantity in which it is taken with these food materials, may with entire certainty be set down as harmless, on the basis of the experience obtained on so large a scale during several centuries.

In this respect the food materials containing caffeine are quite essentially distinguished from alcoholic beverages and from tobacco, the misuse of which so easily gives rise to cases of poisoning and of illness.

The harmlessness of caffeine in food material under consideration is confirmed and explained by the nature of these food materials for the human organism, and it has led in all parts of the world, both civilized and savage people to instinctively discover and use as food material all plants which contain caffeine or the analogous theobromine of similar effect. These plants are the tea shrub, the coffee tree, the cola nut tree, the bush tea shrub, (Cyclopia) the chocolate tree, the South American vine, Paulliana Sorbilis, which yields guarana paste, and finally two species of *ilex*, one of which furnished the so-called Appalachian tea of North America, and the other (Ilex L'Araguayensis) the Paraguay tea, or yuba mate' of the southern regions of South America. But it is not, as one might assume the pleasant taste which has led to the use as food material of different products from these plants. An infusion of Paraguay tea, for example, is far from being agreeable in taste, yet is very highly valued by the inhabitants of the region where the shrub is indigenous. Also the valued good flavor is given to coffee beans by roasting, and to the black infusion prepared therefrom by addition of sugar, milk or cream, and to the leaves of the tea shrub by addition of sweet scented flowers. Hitherto no plant containing caffeine or theobromine has been discovered which has not found use as food material. All the circumstances already mentioned—the instinctive discovery of all so far known plants containing caffeine or theobromine, in all parts of the world, their universally wide distribution in spite of their original lack of pleasant taste, making them uninviting—all these facts prove beyond doubt that the importance of these food materials depends exclusively on their content of caffeine or theobromine. The action of caffeine, with which only we have here to do, concerns at the same time, in a quite peculiar

way, the central nervous system and the muscular system on which the movements of the body depend. When the muscles and nerves are fatigued by severe or long-continued activity, activity can only be continued, if at all, by the most strenuous exertion of the will, caffeine in the quantities in which it is taken with food materials, so acts upon the nerves and muscles that the feeling of fatigue disappears, because the stimulas of the will more easily reaches the muscles, and the supply of energy of the latter can be more easily and efficiently used than in the condition of fatigue without caffeine. Under the influences of the latter, also the more strenuous intellectual activities are more easily prolongued, and the feeling of mental lassitude is less perceptible.

Caffein is hence a means of refreshing bodily and mental activity, so that this may be prolonged when the condition of fatigue has already begun to produce restraint and to call for more severe exertion of the will, a state which, as is well known, is painful or disagreeable.

This advantageous effect in conditions of fatigue of small quantities of caffeine, as it is commonly taken in coffee or tea, might however by continued use become injurious, if it were in all cases necessarily exerted, that is to say, if by caffeine the muscles and nerves were directly spurred on to increased activity. This is, however, not the case, and just in this lies the peculiarity of the effect in question: The muscles and the simultaneously acting nerves only under the influence of caffeine respond more easily to the impulse of the will, but do not develop spontaneous activity, that is, without the co-operation of the will. If after the use of coffee or tea no work is done, as for example after taking coffee at the end of a dinner, muscles and nerves remain quiet as if no coffee had been taken. In such cases the pleasure which good coffee and tea procure are decisively in favor of their use.

This character of caffeine action makes it plain that these food materials do not injure the organism by their caffeine content, and especially do not by continued use cause any chronic form of illness as alcoholic beverages so easily do.

If strong coffee and aromatic tea, especially the so-called green kind, produce with some persons agitation, so that for instance after the use of these beverages in the evening such persons suffer at night from sleeplessness, this does not depend upon the caffeine, but upon the ingredient from which, as has been mentioned the aroma and pleasant taste of well prepared coffee and tea are derived. There are persons who cannot in general bear tea

or coffee, while Paraguay tea, with its less agreeable taste, suits them well, in spite of its containing caffeine.

Experience and the facts obtained by experiment make it therefore indisputable that the quantities of caffeine which are for the most part taken in with coffee or tea used daily for a whole lifetime are non-injurious to health, since they neither give rise to acute or chronic poisoning, nor weaken the organism so as to dispose it to attacks of illness.

It may now be asked further how large are the quantities of caffeine which are usually or as a maximum taken in coffee and tea. A small cup of coffee, of 150 ccm- 5 ounces-which has been prepared from 15 grm.—230 grains of coffee beans—contains 0.1 to 0.12 grm.—1.5 to 1.8 grains of caffeine, and the same amount is contained in a cup of the infusion prepared from 5 to 6 grm.—75 to 90 grains of tea leaves. If it be assumed that a man daily, in the morning, at noon or in the afternoon, and in the evening drinks altogether five cups of coffee or tea or partly coffee and partly tea, he takes in this 0.5 to 0.6 grm.—7.5 to 9.0 grains of caffeine. These moderate quantities are thoroughly harmless. Many persons, especially women, in countries where tea drinking is wide spread, may easily bring the number of cups to double or even several times these figures. Let us assume that the maximum daily ingestion amounts to ten cups of tea or coffee together. These contain 1.0 to 1.2 grm.—15 to 18 grains of caffeine. Even such doses cause no disturbance of health if they be taken, not in the form of pure caffeine all at once, but in coffee, tea and other preparations in a diluted state and in divided portions in the course of the day. In agreement with this in the direction of the Pharmacopoeia of the German Empire that the largest daily dose of caffeine should not exclude 1.5 grm.—23 grains.

Coca-Cola syrup contains, by the accordant analysis of Dr. Mallet of the University of Virginia and Dr. W. D. Biglow of the Department of Agriculture, 0.19 to 0.24 grm., in the average 0.22 grms., or in round numbers, 0.25 grm.—3.8 grains of caffeine in 100 grm.—1540 grains of syrup. As regards content of caffeine, therefore 40 to 45 grm.—600 to 700 grains of Coca-Cola Syrup—are equivalent to a cup, 200 grm.—3000 grains to five cups, and 400 grm.—6000 grains—to ten cups of coffee or tea.

From these data it follows in the most positive way that 200 to 400 grm. of Coca-Cola Syrup taken in divided portions daily, will not be injurious to health. In certain respects, the Coca-Cola syrup is even more harmless than the corresponding quantity of coffee, or tea, since it does

not, like these, produce agitation and therefore cause sleeplessness.

According to the communications which have reached me, about 30 grm.—one ounce of Coca-Cola Syrup—is used to a glass of about 210 ccm. of the beverage. There might therefore be taken daily of this beverage 1400—2800 ccm. without any fear of injury to health, from the quantity of caffeine contained therein. Rather might the amount of liquid and of sugar taken at the same time prove injurious by impairment of the digestive activity of the stomach. As a matter of fact, such large quantities of the beverage will but rarely if ever be taken. Most consumers will undoubtedly limit themselves to less. In such cases injury is entirely out of the question. Indeed, the mis-use of Coca-Cola by taking it in excess, as so often happens with alcoholic drinks, anyway is probably not to be feared. Not only can no well-founded objection be urged against the manufacture of food products containing caffeine by the introduction of this in any form, but rather should the extension of such manufacture be regarded with favor in the interests of the public welfare. Undoubtedly alcoholic drinks belong to the most injurious class of food products, and the contest against their use and especially their misuse is thoroughly justified. This can be most successful only by seeking to replace alcoholic beverages by other and harmless food products. Among such harmless food products the most suitable with which to take up and carry through the war against alcoholic drinks are coffee, tea, cocoa, chocolate, and in general all natural or artificial food materials which contain caffeine or theobromine, on account of their advantageous and agreeable effect above described.

Carbonated waters, for example, which are taken with pleasure for their refreshing action, will not fulfill the purpose in question, since they exert none of the special effects upon the organism that tea, coffee, etc. do. In the contest with alcoholic drinks it is of importance that the food materials which are to replace them shall be harmless, contain caffeine or theobromine and also actually be consumed upon a large scale. In this way Coca-Cola may be of value.

On the basis of the preceding explanation, I sum up my opinion thus: That Coca-Cola Syrup represents a beverage containing caffeine, and that, even in the maximum quantity which may be generally taken daily, it can not, because of its caffeine content be accounted injurious to health."

DR. B. H. BROWN.

the next witness called on behalf of the Claimant and

Intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. SIZER:

Q. What is your occupation and where do you reside?

A. I am a graduate of medicine. At the present I have charge of the laboratory of the Sprague Dairy Company.

The Court: Of what place?

The Witness: At Chattanooga.

BY MR. SIZER.:

Q. Have you ever held any official position in Chattanooga?

A. I was City food inspector three years.

Q. When did your connection as City food inspector cease?

A. In August, 1910.

Q. Was it at that time you went with the Sprague Dairy Company?

A. Yes, sir.

Q. You say you have taken the degree of Doctor of Medicine?

A. Yes, sir.

Q. Have you ever practiced medicine, and if so, to what particular branches have you devoted yourself?

A. I never practiced. The first three years after graduation I was in New York doing clinical work in the hospitals of New York, and then when I came back to Chattanooga I took the position of food inspector. I have always done more or less laboratory work.

Q. As food Inspector, has it been your duty among other things to inspect the soda fountains in the City?

A. Yes, sir.

Q. In connection with the inspection work have you had occasion to observe the habits of children patronizing soda fountains as to the drinks they take?

A. Yes, sir.

Q. State what habits the children have according to your observation, as to whether they are accustomed to drinking Coca-Cola.

A. I have never seen any children, as I recall, drinking Coca-Cola—that is, under fourteen or fifteen years of age.

Q. What kind of drinks do young children usually prefer or take?

A. Soda water, ice cream soda.

Q. Did you assist in making an examination of a number of subjects in the City of Chattanooga last year, who were accustomed to the use of Coca-Cola?

A. Yes, sir.

Q. Who else participated?

A. Doctor Wert, Doctor Holtzclaw.

Q. Are they practicing physicians here?

A. Yes, sir.

Q. How many subjects did you examine?

A. One hundred.

Q. Do you remember the largest amount of Coca-Cola taken by any subject?

A. Fifteen glasses.

Q. How many took that?

A. Two said they would drink from twelve to fifteen.

Q. What was the next largest number?

A. Ten.

Q. What was the average number used per day?

A. Can I refer to my memorandum?

Q. Yes.

A. I think 2.46—no, 2.48.

Q. In selecting the subjects for that examination was it the effort of the examiners to get those who used the largest amount of Coca-Cola?

A. Yes, sir.

Mr. Miller: He has already answered the question but I shall object to leading questions.

The Court: I sustain the exception; it is well taken and I exclude this answer.

BY MR. SIZER

Q. I want you to state what kind of an examination you subjected those one hundred to.

A. They were given the same examination as those in Atlanta by Doctor Roberts, Boland and Paulin.

Q. Was Doctor Roberts present during the time that was conducted?

A. Not during the entire time. He was here part of the time.

Q. Can you state what the details of the examination were?

A. One hundred males of an average age of 24.57 years.

Q. What was the oldest man?

A. Fifty-six.

Q. And the youngest?

A. Fourteen.

Q. You say these were all males?

A. Yes sir.

Q. Did you try to get any females or did you have ıy difficulty in getting them, and if so explain why.
A. We did not attempt to get any females. We tried ıce and talked about it a little bit and finally decided ɔt to try to get them on account of the difficulty in get-ng them to come to the examination.
Q. Was that on account of the nature of the examina-on?
Mr. Miller: I object to his leading the witness.
The Court: Yes, the objection is sustained.

BY MR. SIZER:

Q. State what the reason was, Doctor, why it was und impracticable to get any females.
A. The examination was such itself that we did not elieve we could get them to submit to it.
Q. Now, just go ahead and state the details of that :amination, in what respects were they examined, what nd of an examination were they subjected to?
A. The name, the occupation, age, sex, insurance, ımber of policies, date, insurance total amount, wheth- they had been refused insurance or not, if so, date of fusal and what reason assigned, how long they had een using Coca-Cola, the amount daily, whether they used offee, cocoa or alcohol, or tobacco, and other stimulants. s to how Coca-Cola affected them, as to whether or not ıey were in perfect health so far as they knew at the me of the examination, as to whether any of them had ıd serious illness in five years previous to the examina-on.
Q. And these were all questions that were submit-d to the subjects?
A. Yes, sir; and the medical examination was—ame, occupation, apparent age, appearance as to health, spiration, girth of chest at rest, full inspiration, forced xpiration, girth of abdomen, weight, height, tempera-ure, pulse rate, regularity, quality, blood pressure, sys-olic and diastolic, reflexes—knee jirk, abdominal reflex eaction, eyes, light, distance, Rhomberg's symptoms, ubject ataxic headaches, causes of headaches, any other erve defect, any disease or abnormality in brain or ner-ous symptoms, heart or blood vessels, lungs or respira-ory tracts, stomach or other abdominal organs, kidneys, heumatism or gout. Then the urine was examined and he specific gravity taken, whether it contained albumen r sugar or not,sediment, crystalline, casts, and other ele-ients.
The Court: Omit any matter as to the insurance pol-

icies; as I have ruled in the case of the other witnesses I rule in the case of this witness and exclude it.

The Witness: The average amount of use of Coca-Cola, —I mean, the average length used of Coca-Cola, length of time, 7.31 years. Average number of drinks per day, 2.48. Sixty-nine of the hundred used coffee, two cocoa, 57 alcohol, 22 tea, 80 used tobacco and 43 used alcohol, coffee and tobacco. On 76 it had no effect whatever. Eleven stimulated, 8 kept awake if used at night, one it made nervous if he drank more than five drinks per day; one it made nervous if he drank more than eight per day, and one made nervous if he drank more than three, and one made nervous and destroyed his appetite if it was taken before meals, but if taken after meals, no effect whatever.

Q. All right; now go ahead.

A. Thirty-four of the one hundred used Coca-Cola for ten years or more, and they used it at an average of 2.6 drinks per day. The average temperature of 34 was 98.4 and the average pulse was 86.6.

Q. State whether or not these are normal, or not.

A. I think so. The average temperature of the entire one hundred was 98.9, the average pulse 85.24, the average respiration 20.8, and the average specific gravity was 10.20. Albumen was found in one of the urines.

Q. The specific gravity of the urine?

A. Yes, sir.

Q. Is that normal?

A. Yes, sir. Albumen was found in one of the urines, was found in one of the hundred. This man had gonorrhea at the time and it was demonstrated by the microscope. Sugar was absent in the entire one hundred.

Q. Now as to the result of these examinations, Doctor, did you find any one of these subjects suffering from any complaint, ailment or physical condition that could in any way be attributed to the use of Coca-Cola?

A. No, sir.

Q. Now, who approached you to make this examination on behalf of the Coca-Cola Company?

A. Mr. E. Y. Chapin.

Q. When you were first approached to make them, state whether or not you were reluctant to enter into it, and if so, for what reason?

A. I did not care to go into it.

Mr. Miller: I object to his going into that—he made the examinations.

The Court: What is the purpose?

Mr. Sizer: To show this, that at first Doctor Brown was reluctant to undertake the work for the reason that he

thought the result might not be favorable and he was instructed to go on and make the examination and report the results regardless of whether they were favorable or not, so it would show there was no purpose in getting favorable testimony.

The Court: The question of his reluctance is immaterial. The question about instructions I do not rule on.

BY MR. SIZER:

Q. What instructions were you given by Mr. Chapin as the representative of the Coca-Cola Company with reference to making these examinations and reporting on them?

Mr. Miller: I object to that. He can state what he did and whether or not he colored his reports in any way, but as to instructions, that is a matter of private information.

The Court: I overrule the exception.

BY MR. SIZER:

Q. State now, Doctor.

A. That they were anxious to know if it was producing harmful results, as anxious as anyone else, and if it was, they wanted to stop the sale of it.

Mr. Miller: I object to that as self-serving.

The Court: That statement is self-serving. The question was as to the instructions that were given you.

The Witness: To make as thorough an examination or examinations as possible, and to determine whether or not it was harmful.

BY MR. SIZER:

Q. Have you had any personal acquaintance with people who drink Coca-Cola?

A. Yes, sir, I know a great many people who drink Coca-Cola.

Q. Is it largely consumed in Chattanooga?

A. Yes sir.

Q. At soda fountains and in bottles also?

A. Yes sir.

Q. Have you ever seen any people among your acquaintance suffering from any derangement or ailment that could be traceable to the use of Coca-Cola?

A. No, sir.

Mr. Sizer: You may cross-examine him.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What had been your general duties and what were they at the time you made this examination, aside from the

examination itself, Mr. Brown?

A. What was that?

Q. I say, what had been your general duties for the last three years or five years, and what were they at the time you made these examinations, except when you were making the examinations?

A. Food Inspector of the City of Chattanooga.

Q. Now, you were paid by the City to inspect foods throughout the city?

A. Yes, sir.

Q. And as a consequence you do not lay around soda fountains very much?

A. No, sir; not very much.

Q. What would be the difference, if any, in the physiological action or results if you should introduce caffeine into bread or canned beans or cabbage, or anything of that kind, than putting it in a beverage?

A. I do not know that there would be any difference?

Q. In your opinion you say there would not be any?

A. From the effects of the caffeine itself ——

Q. As respects to physiological action on a person who consumed it, would there be any?

A. From the effects of the caffeine, is what I said.

Q. And so far as putting it in milk, it would be precisely the same as putting it in carbonated water?

A. I do not know as to that.

Q. Well, that is your opinion?

A. I don't know.

Q. Do you mean to say that with this extensive experience of yours as an inspector, you do not know about that?

A. I never put any caffeine in milk and never saw any put in milk.

Q. You were food inspector here at that time?

A. Yes, sir.

Q. Would you have prohibited its use in milk or not?

A. Yes, I would.

Q. Now, these subjects that you examined, you say, in part, were under the supervision of Doctor Roberts. Was that the same Doctor Roberts that testified here the other day?

A. They were not under his supervision.

Q. You say they were not?

A. He was present during a part of the examination.

Q. I say, is that the same Doctor Roberts who came from Atlanta up here on behalf of The Coca-Cola Company and started these examinations?

A. Yes, sir.

Q. These subjects were engaged by Fred Shepard down

here at fifty cents a head, and Fred got twenty-five cents for getting them to come up to you, and the subject got the other twenty-five cents for coming up and being examined?

A. I do not know as to that. The subjects were sent there by Mr. Shepard. I don't know whether he paid them or not.

Q. That was Fred Shepard?

A. Yes, sir.

Q. A man who is generally known as Fred Shepard?

A. Yes, sir.

Q. And Fred down on the street there about the police station somewhere getting fellows to come up, and as they would come up ——

A. (Interrupting) Well, he sent, or rather they came in, I don't know who brought them. They were all classes of men and all occupations, — bankers, manufacturers and laborers.

Q. What bankers did you examine in that connection?

A. I can't recall the names. I can look at the list if you permit me to do so; they were men who were bank tellers.

Q. You did not pay the subjects yourself?

A. No, sir.

Q. What is the normal temperature, Doctor?

A. 98.6, but it varies at different times of the day.

Q. What is the normal respiration?

A. Twenty, — eighteen to twenty.

Q. Eighteen to twenty?

A. Yes, sir.

Q. Does that vary with age, or what?

A. Yes, sir; it varies with age.

Q. Is that the only condition that affects it outside of ill health?

A. No, sir; exercise, heat, and a great many things affect it.

Q. Do you know what the normal blood pressure is?

A. Which, the systolic or diastolic?

Q. Both.

A. The systolic is 1.10 to 1.35 by the Erlanger thermometer sphygmomanometer.

Q. And what was the other?

A. The diastolic, .65 to .95.

Q. What time of the year were these examinations of yours made?

A. In July.

Q. What is the normal pulse, Doctor?

A. The normal pulse, — well, it varies according to age.

Q. Well, in man, I am talking about; you examined men?

A. Seventy to 80 — 72, probably the average would be taken as 72.

Q. In many people it is under 65, is it, or as low as 65?

A. Yes, sir.

Q. And you say that normal is about 70?

A. Seventy to 80.

Q. Didn't you say about 72?

A. Yes, sir.

Q. And the average you state you found to be about 85?

A. Yes, sir; but the conditions were such that you would expect the pulse rate to be of that height.

Mr. Miller: Yes, I think so, but stand aside.

Mr. Sizer: Hold on.

REDIRECT EXAMINATION,
BY MR. SIZER:

Q. What conditions were you referring to?

A. The fact that they climbed twenty-five or thirty steps to get into the office and were out of breath more or less, and more or less excited — never had seen a sphygmomanometer before, and when you put it on the arm they thought it was some electrical instrument.

Q. Would those things be calculated to raise the blood pressure?

A. Yes, sir.

Q. Doctor, as Food Inspector would you have permitted anyone to put caffeine in milk?

A. No, sir.

Q. Would you have done that any more than you would have permitted anyone to put sugar or salt or flour in milk?

A. No, sir.

Q. Milk is a well known substance and putting a foreign substance in it would be an adulteration of it, would it?

A. Yes, sir.

Q. What time of the day were these examinations conducted, about?

A. They were taken at about four or five in the evening.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Doctor, did I understand that these subjects were so affected by the conditions that you saw there that you could not judge what their normal condition was?

A. Well, very often people when undergoing examinations of any kind are more or less excited — it causes ex-

citement and causes the pulse rate to increase, and you have to take it four or five times in order to get an accurate pulse rate.

Q. Now then, you took this, as I understand you, you examined each one of these and then turned him out when you got through, let him go?

A. Yes, sir.

Q. And do you consider these conditions reliable under which to make the test?

A. Yes, sir.

Q. And you made one examination only?

A. Yes, sir.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Were the digressions from normal such as to affect the blood pressure, the respiration or the heart beat, in any of these subjects — was it such as to indicate any derangement or impaired condition of the system?

A. No, sir; I think not.

Mr. Miller: I think that has been gone into in chief.

The Court: Well ——

(Witness excused.)

DR. C. HOLTZCLAW,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Doctor, are you a practicing physician in Chattanooga?

A. Yes, I am.

Q. How many years have you practiced medicine?

A. Thirty years.

Q. Did you participate with Doctor Brown in making the examinations to which he has just testified?

A. Yes, sir.

Q. As a result of these examinations, was any impairment or derangement of the system or physical condition of any of those subjects found which could be traceable in any way to the use of Coca-Cola?

A. I think not, to the best of my knowledge and belief.

Q. Have you had occasion among your patients and clients to observe people who were accustomed to drinking Coca-Cola?

A. I have frequently.

Q. Have you ever known a case of disease or ailment of

any kind that was traceable to the use of Coca-Cola by people?

A. I have not, of but one instance, and that was so complicated that I really could not say positively that it was from Coca-Cola.

Q. What was that case?

A. That was the case of an old maid stenographer who lived by herself, and when you get a woman living by herself, they don't cook, they live on tea, coffee and crackers, and then during the day time she would drink a great quantity of Coca-Cola, tea and coffee and crackers, they were her sustenance, and then she got indigestion very badly and she had to cut it out, or I stopped her from drinking Coca-Cola, coffee and tea. She made a rapid recovery.

Q. You say she made a rapid recovery?

A. Yes, as soon as I stopped the excessive use of these substances.

Q. That was as soon as you stopped the excessive use of them?

A. Yes, sir; but I could not say positively that it was due to Coca-Cola. That is the only case that I have ever peremptorily stopped the use of Coca-Cola in.

Q. Are you able to testify, Doctor, as to the habit of children in respect to drinking Coca-Cola?

A. Children do not like Coca-Cola very much in the way of soft drinks — they drink something sweet. I have seen children, though, drink Coca-Cola, but I have never noticed any deleterious effects at all from it.

Q. Have you had any personal experience with the use of caffeine-containing beverages?

A. I have; I drink Coca-Cola.

Q. And what else — coffee or tea?

A. I don't drink coffee or tea, because it gives me indigestion, but Coca-Cola does not give me indigestion. It is rather helpful, in fact.

Mr. Sizer: You may cross-examine him.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Doctor, your specialty is surgery, is it not?

A. For the last three or four years — before that, however, I taught therapeutics in a medical college for a number of years.

Q. And these subjects were examined at that time, — Fred Shepard sent them to the police station down here for examination, and you don't know, of course ——

Mr. Sizer: I object to that; it has not been shown they

were examined in the police station.

The Witness: Neither were they all sent by Fred Shepard. Some came up there of their own free will and accord, and some came at the instigation of Mr. Thomas, and some at my instigation.

BY MR. MILLER:

Q. What about those that were sent by Shepard, where did they come to?

A. Where did they come to?

Q. Yes.

A. They came to Doctor Brown's office in the City Hall.

Q. Where was that?

A. I am sure I have not a plan of the City Hall. I do not remember the number of rooms.

Q. Is that over here connected with the police headquarters?

A. Why, I am not familiar exactly with where police headquarters are — they are, I think, at the old Market House over here. You have got the police headquarters and the City Hall rather confused, I should think. The City Hall property is in the new City Hall, which is right near the present building that we are in. The police headquarters are over on Georgia avenue, between Georgia avenue and Eighth street.

Q. Between Georgia avenue and Eighth street?

A. Over on Georgia avenue, just this side of Eighth street. The City Hall is next to this building here.

Q. In which of these buildings did you conduct this examination?

A. The City Hall.

Q. And that is the new City Hall right here near the present building, is that right or not?

A. Yes, sir; the City Hall. The other building is police headquarters.

Q. Well, I wanted to know whether it was over on Eighth street or on Georgia avenue between Eighth and Ninth streets, or whether it was over on Eleventh street.

A. It was in the City Hall. It does not make any difference where the examinations were made; I offered them my office for that purpose.

Q. I agree with you on that — I am thoroughly in accord with you about that. I ask you whether or not in making examinations of these persons that came up and in basing your opinion, or in forming your opinion, you based it on what they told you as to the consumption of tea and coffee and of tobacco and of alcohol and of Coca-Cola?

A. Yes, sir; I never saw any of them drink it.

Q. And you never frequented soda fountains or other places where Coca-Cola is dispensed in Chattanooga for the especial purpose of making observations as to what class of people take the most of it, either, did you, Doctor?

A. I have stood by drug stores several times and noticed that particular fact — I have been at R. J. Miller's drug store, Voigt's drug store and one or two others. And I find that all classes of people drink Coca-Cola, women, children and men from all walks of life.

The Court: What kind of people were these that were offered for examination with reference to their occupations?

The Witness: The appearance, you mean?

The Court: As compared with the average.

The Witness: They were the average people from every walk of life. I presume the majority of them were men who worked or who did more or less manual labor. There were eight or ten, if I mistake not, who were operatives in the hosiery mills or spinning mills, and there were plumbers, electricians, men that you meet in the ordinary, everyday walk of life. They were not selected, but picked up at random, so my understanding was.

BY MR. MILLER:

Q. Picked up at random by this man Shepard and delivered up there by him?

A. By various parties. Several parties got men to come up for examination. Not particularly Mr. Shepard. I understood that Mr. Shepard was employed because the balance of us did not have time, that he was employed to do this work, just like you would employ anybody to do anything else.

REDIRECT EXAMINATION,
BY MR. SIZER:

Q. Is that a summary that you have there of your examinations showing the different vocations that these subjects followed?

A. Yes, sir; I think Doctor Brown has it.

Q. I would like to have Doctor Brown state that. Have you a copy of that summary?

A. I don't know whether I have that particular feature about it. I have not that with the different avocations.

Q. I will ask you, Doctor, if that is a summary of the results of your examination.

A. I think so.

Q. Does that show the occupations pursued by the different subjects who were examined?

General Cox: It just shows what that subject told them

in place of what they were?

The Witness: Yes, sir. I can give you the exact figures — can not, I mean, except the largest number of any one class of people, as to their business, was some eight or ten who worked in the hosiery mill.

BY MR. SIZER:

Q. This list you have here gives the occupation of each one of the subjects, but you have not got it summarized?

A. Yes, sir. I think Doctor Brown has the whole business summarized.

Mr. Sizer: We offer that list in evidence.

(The list was thereupon marked Exhibit 1 to the testimony of Dr. Holtzclaw.)

Mr. Miller: I just want to ask one question about that.

BY MR. MILLER:

Q. In making up that paper or summary, Doctor Holtzclaw, the statement that the men made that presented themselves for examination was taken as being true as to their occupations?

A. Yes, sir. Well, in fact, I knew quite a number of them. I knew personally two-thirds of the people. I knew it was a fact that they did work at that, they had been patients of mine, some of them, and I knew as a matter of fact what their avocation was.

Q. Will you kindly call off from that paper before you leave the stand and tell us how many of those you knew — just check them off. I have no objection to the filing of the paper.

The Court: Does that give the names of the persons?

The Witness: This does not give the names of them. If you will get that ——

Mr. Sizer: I will get that.

The Witness: If you have a list I could tell you exactly.

Mr. Miller: Well, what is that list you have?

The Witness: It is the occupation, the ages, the sexes and whether they have any weakness or not, and amount of Coca-Cola they use, the number of years they have used it, amount daily, whether they drink excessively cocoa, alcohol, coffee, tea, use tobacco.

BY MR. MILLER:

Q. Well, as I submit, it does not give any names — you say it does not?

A. No, sir; just a summary without the names.

Q. So you don't know whether that was so — whether that is the occupation of the people that were actually ex-

amined by you or not because the names are not there to show?

A. Well, I could not swear it is, but my belief is it is because we made all of these together and this other part we had mapped out and then this should be summarized.

Mr. Miller: Before that is filed I would like to have the names of the people filed along with it.

Mr. Sizer: We will get that as soon as Doctor Brown comes back.

The Witness: I said that possibly two-thirds at least were known to me and that I knew their avocations.

Mr. Miller: Well, that is the third time you have made that statement and I suppose it must be true.

The Witness: And it is the same way about the City Hall.

(Witness excused.)

J. W. JOHNSON,

the next witness called on behalf of the claimant and intervenor, the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Are you a practicing physician?

A. I am.

Q. Do you know among your patients and acquaintances any people who drink the beverage known as Coca-Cola?

A. I do.

Q. Have you ever known of any disease or ailment due to the use of Coca-Cola?

A. I never treated such.

Q. Have you ever known of any such case?

A. No, sir.

Q. Do you know about the habit of children with respect to taking Coca-Cola?

A. No, sir; I do not.

Q. You have not observed that?

A. No, sir.

Q. Are you the examiner for any insurance company — medical examiner?

A. Yes, sir.

Q. For what company?

A. The Volunteer State.

Q. What is the purpose of the examination made by the medical directors of insurance companies?

A. To find out anything that would affect the longevity of the applicant.

Q. Among other inquiries made in the course of the physical examination, are there or not questions propounded as to the use by the applicant of certain substances that would affect the health?

A. There is.

Mr. Miller: We don't think this matter of insurance is competent. We move to exclude the previous answer and I object to this question and answer.

Mr. Sizer: This insurance examination is the result of an accumulated experience of a long period of years by medical experts, and the examinations are made for the purpose of determining the habits of the applicant as to the use ——

The Court: I overrule the exception so far as you are asking for the custom of insurance companies in inquiring as to certain things.

BY MR. SIZER:

Q. Are any inquiries made in that connection as to the use by the applicant of caffeine-containing beverages?

Mr. Miller: I object to that.

The Court: I overrule the objection.

The Witness: There are none.

BY MR. SIZER:

Q. What kind of substances are inquired about on this examination?

Mr. Miller: I object.

The Court: I overrule the objection.

The Witness: The use of alcohol, morphia and any narcotic.

BY MR. SIZER:

Q. Do you personally use any caffeine-containing beverages?

A. Yes, sir.

Q. What?

A. I use coffee and sometimes take a drink of Coca-Cola.

Q. What is the extent of your use of coffee?

A. In the winter time, I generally take two or three cups of coffee a day.

Q. Has your use of caffeine-containing beverages ever affected your health?

A. Not that I know of.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. To what extent do you use Coca-Cola?

A. Some days I do not take any, and the days when I

drop in the drug store I will probably take one or two glasses of Coca-Cola, it just depends on the surroundings.

Q. Is it not true that caffeine is a narcotic?

A. How is that?

Q. Is not caffeine a narcotic?

A. I should think that caffeine was a stimulant.

Q. Now, is it true that in the Sims Building, where your office is located, that there is a soda fountain, and that commencing at 8:30 in the morning until ten or eleven o'clock, that fountain is surrounded by girls and boys who work in that building who are ordering Coca-Cola and drinking it and consuming it?

A. I see several in there when I go in there and come out.

Q. When you take coffee, you take it with your meals, don't you?

A. I do.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. That place in the James Building, is it an attractive place to take drinks?

A. It is right on the street where everybody comes in and goes out.

Q. Anything else sold there?

A. Yes, sir; a tobacco stand and nearly everything in that line.

BY MR. MILLER:

Q. Girls don't take any tobacco in there, do they?

A. Not that I know of.

BY MR. SIZER:

Q. But girls drink various kinds of drinks in there?

A. Yes, sir.

(Witness excused.)

DR. B. S. WERT,

the next witness called on behalf of the claimant and intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. You are a practicing physician here?

A. Yes, sir.

Q. How long have you practiced?

A. About thirty years.

Q. Did you participate with Doctor Brown and Doctor Holtzclaw in making the examination to which they have testified?

A. Yes, sir.

Q. Did you personally know a number of the subjects that you examined in that connection?

A. I did.

Q. Can you state about what proportion of them were personally known to you?

A. No, sir; I could not, but I would think I knew about 25 or 30 of them.

Q. From how many vocations were those subjects selected?

A. I do not know that I remember that, but I think there probably at least 30 or 40 different vocations, but I am not sure of that.

Q. Were there subjects there who followed sedentary vocations?

A. Yes, sir.

Q. Bank employes and clerks in stores.

A. That was my understanding, yes.

Q. As a result of those investigations, was any one of those subjects found to be suffering from any complaint or ailment that could be traceable to the use of Coca-Cola?

A. No, sir; I don't think so.

Q. Have you personally among your acquaintances and patients been thrown in contact with people who did use Coca-Cola?

A. Yes, sir.

Q. Have you ever seen among your patients or acquaintances any person suffering from any disease or ailment that resulted from Coca-Cola?

A. No, sir; no diseases or ailments. I have seen some that I thought likely were taking a little too much of it, but you could not say they were diseased.

A. Have you observed the habits of children with respect to taking Coca-Cola?

A. Yes, sir.

Q. What is that habit?

A. My observation is that children do not use it a great deal.

Q. What kind of drinks do they prefer?

A. Children as a rule like cream soda.

Q. You say you have seen people who you thought were taking too much of Coca-Cola: have you also seen people whom you thought were taking too much of other things?

A. Sure.

Mr. Miller: I object to this cross-examination of his own witness.

The Court: The objection is sustained and the answer is excluded.

BY MR. SIZER:

Q. Have you or not seen people among your patients and acquaintances who took too much of various things?

A. I have.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. I notice in this list presented here, that a number of these people were bottlers, that is, they gave their vocation as bottlers. Do you know what kind of bottlers they were?

A. No, sir, I do not know what kind of bottlers they were.

Q. Others were soda clerks, that meant the men who served out the drinks at soda fountains?

A. Yes, sir.

Q. You only took the statement of these people, except insofar as you had personal acquaintance with them?

A. Yes, sir; that is true.

Q. Where was that examination held?

A. In the City Hall, the adjoining building.

Q. The new City Hall?

A. Yes, sir.

Q. When was it?

A. I think it was last July, July 10th.

(Witness excused.)

E. DUNBAR NEWELL,

the next witness called on behalf of the Coca-Cola Company, first duly sworn, testified as follows, being of lawful age:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Are you a practicing physician in this city?

A. I am.

Q. How long have you practiced here?

A. Two years.

Q. Before you commenced to practice here, where did you live and practice?

A. Louisiana.

Q. How long have you practiced altogether?

A. Thirteen years.

Q. Do you know the beverage called Coca-Cola?

A. I do.

Q. Do you know the extent to which that is sold as a drink in this vicinity?

A. Yes, sir.

Q. Is it extensively sold?

A. Yes, sir.

Q. Have you had occasion to observe among your pa-

tients and acquaintances people who have used it?

A. I have.

Q. Have you ever seen any case of any ailment or disease resulting from the use of Coca-Cola?

A. I have not.

Q. Is Coca-Cola, from your observation and experience of it, a habit-forming substance?

A. It is not.

Q. What about the use of it by children, have you observed as to that?

A. I have observed that they do not take it.

Q. Do you personally use caffeine-containing beverages?

A. Yes, sir.

Q. What?

A. Coffee, tea and Coca-Cola.

Q. To what extent?

A. I drink one cup of coffee a day and two glasses of tea in the summer time and sometimes during the winter, and I drink Coca-Cola very spasmodically, and sometimes two or three a day and sometimes I don't drink it for a week or even a month.

Q. What effect did it have on you?

A. I never noticed any effect except when I am tired it stimulates me. When I am not tired, it don't seem to have any effect at all.

Q. Do you drink Coca-Cola as much in the winter time as you do in the summer?

A. I do not.

Q. Is that true of Coca-Cola generally, that people drink more in the hot season than in the winter?

A. Yes, sir.

Q. You lived in Louisiana before you came here?

A. Yes, sir.

Q. What had you observed down in that country with respect to the use of Coca-Cola in the winter months?

A. In most of the small towns in Louisiana, they only run the soda fountains six months in the year, and the other six months they do not run, and when the fountain is not running, they don't drink Coca-Cola at all.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. How long have you known the drink Coca-Cola being sold and dispensed?

A. Since 1900. I never noticed it before that time.

Q. How many physicians are there in Chattanooga?

A. I think 150.

(Witness excused.)

DR. E. E. REISMAN,
the next witness called on behalf of the claimant and intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Are you a practicing physician?
A. Yes, sir.
Q. Of how many years standing?
A. Graduated May 1st, 1906.
Q. How long have you been practicing in Chattanooga?
A. About three years.
Q. Have you been thrown in contact among your patients and acquaintances with people who use Coca-Cola?
A. Yes, sir.
Q. Have you had occasion to observe the effects of it on them?
A. I have.
Q. Have you ever seen anyone who had any disease or ailment that could be traceable to the use of Coca-Cola?
A. No, sir; I never have.
Q. Have you had occasion to observe the use of Coca-Cola by children?
A. I have never seen but one child that professed to like Coca-Cola. That is the only one I have seen.
Q. Is that child a member of a family you practice in?
A. Yes, sir.
Q. Does the use of Coca-Cola affect his health in any way?
A. He is about a fine a specimen as you would want to see.
Q. Do you personally use any caffeine-containing beverages?
A. Yes, sir; I drink coffee and Coca-Cola occasionally.
Q. About how much do you drink?
A. I have taken coffee ever since I was a very little fellow up to the present time, and I take three cups a day, one after each meal regularly, and I drink Coca-Cola quite frequently in the summer, because it is a cooling, refreshing sort of drink. I do not drink it as much in the winter.
Q. How many drinks of Coca-Cola would you take in the summer?
A. One or two, or three, perhaps.
Q. What effect does it have?
A. I have never noticed any effect except mildly stimu-

lating. That is about the only effect I have noticed.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. How old is the child to which you refer?

A. Nearly five years old.

Q. Are you acquainted with Doctor S. S. Cohen, who was called for the Government the other day, or have you read his treatise on therapeutics?

A. I met Doctor Cohen while he was here, but I never read his treatise.

Q. You know from reputation that he is very reliable and classes as a standard authority?

Mr. Sizer: I object to that. I don't understand why they want to examine this witness as to Doctor Cohen's qualifications.

The Court: I have ruled that one man might be asked if another witness was competent to express an opinion.

BY MR. MILLER:

Q. I ask you whether or not Doctor Cohen is regarded as a reliable and reputable authority?

The Court: That is not the question. You may ask him the question as to whether Doctor Cohen is competent to express a medical opinion.

The Witness: Yes, sir; as teacher and professor in a very excellent medical college considered good authority.

BY MR. MILLER:

Q. One of the largest medical schools in the country?

The Court: That question is excluded.

BY MR. SIZER:

Q. Is not Doctor Cohen regarded as having rather radical and erratic opinions on some subjects?

The Court: That is excluded. We are not going to have these witnesses clashing.

Mr. Sizer: If the other side can get in commendatory opinions, we should be allowed to show the adverse.

The Court: I am limiting it to one point; that Doctor Cohen was competent to express an expert opinion, and I exclude everything else.

(Witness excused.)

DR. HOBART A. HARE,
recalled to the stand, testified as follows:

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Is it not true that in your search of the literature,

you have not found what is known as the Zenetz and Allard cases, which are reported respectively as cases of caffeine and Theocin poisoning, repudiated or questioned by any standard medical writer?

A. I have not found them repudiated by any standard medical writer except myself.

Q. No one except yourself?

A. No, sir.

Q. Did you question or repudiate them in your book?

A. No, sir; I did not. I did not know about them when I wrote that edition of the book.

Q. Is it not true, also that Doctor Schmeideberg refers to and cites the Zenetz case on page 97 of his treatise?

A. I do not remember it, but I am willing to admit and say it is there if you say so.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Do you know of any medical writer that refers to the Zenetz and Allard cases at all?

A. I do not except that one just read.

Q. You say you didn't know about that?

A. I took Mr. Miller's word for it it is in there, but I have not seen it.

Mr. Miller: I pass you that authority, and to refresh you, I will ask you if Kobert does not refer to those cases?

The Witness: I am not able to answer that because I am not sufficiently familiar with Kobert.

BY MR. MILLER:

Q. Does not Potter?

The Court: I think that is a matter in chief and is incompetent here, and I exclude all the evidence of the authorities referring to those cases now.

(Witness excused.)

Mr. Hirsch: There was some question asked Doctor Wesener about some translation of Gademer, I believe.

Mr. Miller: My translation was correct, was it not?

Mr. Hirsch: Yes, but there was some question as to a question that was asked of Doctor Wesener. Here it is on page 1702: the question was asked Doctor Wesener:

"Q. Will you give the reference to Gademer?

A. Gademer's work on Toxicology.

Q. That forty-five grains may be consumed daily without harm?

A. He said those amounts have been taken daily without producing noticeable results.

Q. Is he the only authority you can cite on that

point?

A. I think there are some others. I have seen them but I do not recall them now, and so forth."

The Court: How did that occur?

Mr. Hirsch: On direct examination. Here on page 1650:

"Q. Now, as a result of that tolerance, Doctor, right there, would the results of that be that the animal that had acquired a tolerance for a substance could take it with less effect than an animal which had not acquired that tolerance?

A. That would be true in most instances. That would hold true in most instances. But I would further state that in answer to your previous question, that a rabbit has the power to change caffeine — a rabbit's economy has the power to change caffeine rapidly and quickly into the less methylated products, and possibly also xanthine — simple xanthine products, and the same process also takes place in the economy of man. These rabbits were given large doses, equivalent to 50 grains to a man weighing 150 pounds, and I know in the literature where such doses of caffeine have been taken by man, and I also know where statements are made in the literature that 45 grains can be taken daily without causing injurious effects. That being the case, I would say that the rabbit has about the same tolerance to caffeine that man has, based on that hypothesis and deduction."

That was objected to by Mr. Miller, the objection was sustained and the answer was excluded.

The Court: Then how does it get in?

Mr. Hirsch: Finally on Mr. Miller's cross-examination he asked him about Gademer. Mr. Miller asked him about it himself.

The Witness: I don't think I used Gademer by name.

The Court: Then I exclude on cross-examination the reference to Gademer if I excluded it on direct examination. I certainly would exclude it on cross the same as on direct.

Mr. Hirsch: He stated that he based it on literature and Mr. Miller was searching him.

The Court: But the answer on which he based it was excluded.

Mr. Hirsch: Yes.

The Court: Then I exclude it again.

Mr. Miller: I do not know that there is anything I can say that would enlighten your Honor. When I called for the reference on which he based his statement ——

The Court: But I had already excluded the statement, it appears.

Mr. Miller: If they exclude the entire statement, all right; but if they just strike out that based on literature, I could cross-examine.

The Court: What was the exact motion to exclude on direct examination?

Mr. Hirsch (reading): "I move to strike out that portion of the answer that deals with literature and supports his statement, because it is not proper matter for him to state in chief." Mr. Miller made that objection. (Reading): "The Court: The exception is sustained and the answer as to what the literature contains is stricken out."

The Court: Does that exclude the entire statement about the forty-five grains?

Mr. Miller: He based that on literature.

Mr. Sizer: Yes, sir, he answers generally.

The Court: He does not make any statement of his own knowledge or that he knew about the forty-five grains being administered?

Mr. Sizer: No, he does not.

The Court: With that understanding, then, it is all excluded and the cross-examination is included, too.

Mr. Sizer: He didn't make any statement of the amount except that he stated from the literature he understood, etc.

The Court: Then it is all excluded; I mean, the portion that is excepted to.

(Witness excused.)

T. P. SHEPARD,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your occupation?
A. Lawyer.
Q. You live in Chattanooga?
A. Yes, sir.
Q. How old are you?
A. Thirty-three.
Q. Do you drink Coca-Cola?
A. Occasionally, now.
Q. About how much do you drink now?
A. I have no way of telling how much I drink; some days I drink one or two glasses and some days I do not drink any.

Q. At any time in your life did you drink considerable quantities of Coca-Cola?

A. Yes, sir; in 1902 and '03 I was connected with the Coca-Cola bottling plant at Houston, Texas, during the summers of those two years, and I drank a considerable quantity.

Q. How much did you drink during the hot season?

A. I drank on an average any where from eight to fifteen bottles a day.

Q. What effect did it have on you?

A. None except that it slacked my thirst.

Q. That was during the two summers?

A. Yes, sir; I went to Texas in July, 1902, and stayed there during that summer, and then went back next summer in March or April, and stayed all summer.

Q. Did you keep up that same rate of consumption in the winter months?

A. No, sir.

Q. Did you have any desire from that time on to continue taking that amount?

A. No, sir; none whatever.

Q. It didn't form any habit?

A. Not at all. When I left the Coca-Cola business I quit drinking it except occasionally when I would go into a soda fountain and call for Coca-Cola because that was the drink I would think of.

CROSS-EXAMINATION
BY MR. MILLER:

Q. Has Coca-Cola any smell to it?

A. The syrup has, I suppose, some sort of syrupy smell but I could not discribe it.

Q. All syrups have more or less smell; I wondered if this had any distinctive odor as compared with other syrups.

A. None that I recall.

Q. You have a very much younger brother than you are?

A. I have four of them.

Q. But one is a baby brother?

A. I have a brother seventeen years old.

The Court: I think that is about enough of individual experience, but you can have one or two more. We will never get through with witnesses on that line, and I will allow that to proceed with the physicians who have noticed as to other parties.

General Cox: I thought it was to be confined to ten on a side.

Mr. Sizer: No these are not experts.

The Court: How many more have you?

Mr. Sizer: We want to examine Mr. Mahoney because he has been examined for insurance and he was one of the subjects who was examined.

(Witness excused.)

JOHN J. MAHONEY,

the next witness called on behalf of the Claimant and Intervener, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your occupation?

A. General manager of the Cahill Iron Works.

Q. What is your age?

A. Fifty-three next June.

Q. Were you examined by Doctor Brown, Doctor Wert, and Holtzclaw last summer?

A. Yes, sir.

Q. Do you drink Coca-Cola?

A. Yes, sir.

Q. To what extent?

A. In the summer I drink about four bottles a day and in the winter time I average about one every day except I don't drink it on Sunday. It is not convenient to get it.

Q. How long have you been drinking it?

A. Ever since they have been bottling it in Chattanooga.

Q. Do you remember how long that is?

A. I think about ten or twelve years.

Q. What effect does it have on you?

A. None that I know of.

Q. Has it ever formed a habit with you?

A. No, sir; I never drink it except I am in Chattanooga. Sometimes I go to Philadelphia and New York and I am away for several weeks and never think about taking it.

Q. What is your condition of health?

A. I think very good. If the Doctors had to depend on me they would be in a pretty bad shape.

Q. What did the three physicians who examined you last summer say about your health?

(Question objected to and objection sustained.)

Q. Have you been examined recently for life insurance?

A. Not very recently.

Q. How long ago?

A. Ten years.

Mr. Sizer: That is all.

CROSS-EXAMINATION
BY MR. MILLER:

Q. The drug stores are open on Sunday here?

A. Yes, sir.

Q. This Coca-Cola, if it has any effect on you, has had the same effect ever since you have been drinking it—that is, it has no different effect now from what it had when you first began drinking it?

A. No, sir.

Mr. Sizer: We do not want to put any more witnesses on if your Honor does not want us to; we have some fifteen or twenty witnesses along that line.

The Court: Are they persons who were examined by these Doctors?

Mr. Sizer: I think most of them are; at least, several.

The Court: You may examine six of those persons who were examined by the Doctors. There must be some limitation on the examination of individual cases.

(Witness excused.)

J. W. GLASS,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. SIZER:

Q. What is your occupation?

A. Furniture dealer.

Q. In Chattanooga?

A. Yes, sir; Whiteside street.

Q. I want to ask if you drink Coca-Cola now and what your experience with the drinking of it has been.

A. I have been drinking on an average about three bottles a day ever since 1902.

Q. What was your condition in 1902 when you first commenced to drink it?

A. I was not near so healthy as now. I was troubled with indigestion. I was not disabled from work but I did not feel right all the time. My food did not agree with me.

Q. What has been the effect of Coca-Cola on your health?

Mr. Miller: I object. He has not shown himself to be a physician.

The Court: He may state what has been his state of physical health.

BY MR. SIZER:

Q. What has been the condition of your health since you commenced taking Coca-Cola?

A. It has been good; getting gradually better all the time from the indigestion trouble, or whatever it was.

Q. Before 1902 had you made application for life insurance and been rejected?

(Question objected to by the Government and objection sustained.)

Q. Have you recently made application for life insurance and been given a policy?

A. I have.

(Question objected to by the Government and objection sustained, and answer excluded.)

Q. What is your weight?

A. About a hundred and twenty-seven, I should think.

The Court: I will allow the surgeons or physicians who examined this witness to testify on that.

Mr. Sizer: Then I will have to ask him if he was examined.

The Court: Without mentioning the result.

BY MR. SIZER:

Q. Were you examined in 1902, and if so, by what physicians?

A. Along in 1902 I was examined by Doctor Hope for the New York Life, and Doctor Abernathy for the Pheonix Mutual, or Doctor Applegate—some name like that.

Q. Have you been recently examined for life insurance?

A. Yes, sir.

Q. When?

A. Last August.

Q. By whom?

A. Doctor George R. West.

Q. Was he the only one who examined you?

A. Yes, sir.

Mr. Hirsch: We have other gentlemen who have been drinking Coca-Cola who will testify the same thing but who have not been examined by the physician.

The Court: How many of those who were examined by physicians are here now?

Mr. Hirsch. None.

The Court: Well, you can take four or five of the others.

(Witness excused.)

FRED J. PAXON,

the next witness called on behalf of the Claimant and In-

tervenor, The Coca-Cola Company, of lawful age, being sworn, testified as follows:

DIRECT-EXAMINATION
BY MR. HIRSCH:

Q. Where do you live?
A. Atlanta, Georgia.
Q. How long have you been living in Atlanta?
A. Since 1887.
Q. Do you drink Coca-Cola?
A. I do.
Q. How long have you been drinking it?
A. I couldn't tell you; probably eighteen or twenty years.
Q. What effect does it have on you?
A. Not the slightest.
Q. Do you leave Atlanta often?
A. Three or four times a year.
Q. Do you drink Coca-Cola when you are away from Atlanta?
A. No, sir. I very seldom drink it; it does not taste the same.
Q. What is the comparison between Coca-Cola you drink in the summer and winter, if any difference?
A. None at all. I drink it very irregularly.

CROSS-EXAMINATION
BY MR. MILLER:

Q. The effect has been the same on you, of the Coca-Cola, since you began eighteen or twenty years ago?
A. Yes, sir.

REDIRECT EXAMINATION
BY MR. HIRSCH:

Q. Do you drink coffee?
A. Generally about six cups a day.
Q. Has it hurt you any, so far as you know?
A. Not the slightest.
(Witness excused.)

GEORGE C. WALTERS,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Where do you live?
A. Atlanta.

Q. How long have you lived in Atlanta?
A. For eleven years.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How long have you been drinking it?
A. I should say for about fifteen years.
Q. Now give me approximately the average you take a day.
A. Well, it varies so largely—at times I will drink three or four glasses a day, and then I will go for weeks without drinking any. I generally, when I drink it, take two or three glasses.
Q. As far as you know, has Coca-Cola had any effect on you?
A. Not a bit.
Q. Do you drink coffee?
A. I am a slave to it.
Q. How much coffee do you drink a day?
A. About three cups of strong coffee.
Q. Does that have any effect on you?
A. Not so far as I know.
Q. You say that the number of drinks you take per day of Coca-Cola vary?
A. Yes, sir; very greatly.
Q. Has it any effect on you?
A. They have no effect on me.
Q. Do you drink tea?
A. Yes, sir.
Q. Does it have any effect on you?
A. It depends on the brand of tea. Ordinarily it does not but there are some brands of tea that are rather strong.
Q. Do you drink Coca-Cola when away from Atlanta Mr. Walters?
A. Yes, sir, I do in one place. I get very good Coca-Cola in Richmond Va., but after I pass that point I never think of it.

CROSS-EXAMINATION
BY MR. MILLER:

Q. Do you mean to say there is a difference between the Coca-Cola you get in Chattanooga and that which is sold in Atlanta?
A. I have not been fortunate enough to be in Chattanooga to test the Coca-Cola, but I have found a difference in Coca-Cola between the places I have mentioned and some other places.
Q. And where Coca-Cola is dispensed there is a dif-

ference as you understand from the taste?

A. Yes, sir; a very decided difference.

REDIRECT EXAMINATION
BY MR. HIRSCH:

Q. What is that difference, Mr. Walters?

A. Well, I have noticed in some places where it is not properly drawn it often tastes stale. It is not palatable. I notice no difference in the effects because the effects are similar, it has no effect at all. It does not effect me in any place but is purely a matter of the artistic turning of the drink or the drawing of it out of the fountain.

Q. So you say that it is due to the artistic manner of drawing it?

A. Yes, sir.

RECROSS-EXAMINATION
BY MR. MILLER:

Q. You say it is due to the manner in which the man draws it?

A. The taste of it is due to the manner in which it is drawn. I mean, as the dispenser makes the soda water drinks, and I know a great deal about that.

Q. Do you mean as it is drawn in one place it has a taste that is musty and in another it is not musty—that if drawn in one quantity it tastes musty and drawn in another quantity it does not taste musty?

A. Well, the drawing of it has a very decided effect. Probably you have not had any experience with soda fountains.

Q. I am frank to say I never did serve as a fountain boy, but I am asking you as to your experience what it is that makes it different in taste by drawing?

A. Drawing Coca-Cola in one particular way it effervesces and makes a very palatable drink, and in another way it becomes very flat and very stale. Just the difference between stale beer and beer that is freshly drawn.

Q. If you draw stale beer and let it run out, either in a large mug or a small mug, still it tastes stale. I have had some experience with that—

Mr. Sizer: I object to that, as to Mr. Miller's experience about beer.

The Court: On the ground that he is not an expert?

Mr. Sizer: Well—

The Court: The objection is sustained.

Mr. Miller: I agree Mr. Sizer is a censor in beer and intoxicating beverages all right.

BY MR. MILLER

Q. What I want to know, Doctor, is — but I beg your pardon, Mr. Walters I believe it is — if you draw a small quantity and it tastes stale and you draw another quantity and draw it out of the same receptacle ——

A. It is not always necessary to be stale to be unpalatable, it does not always taste stale. I imagine it tastes stale where a little Coca-Cola is used and it becomes old and must deteriorate with age; that, however I am just supposing, that is my idea, but it is a fact that Coca-Cola does not taste the same at the different soda fountains.

Q. The question I address to you is just purely this —whether of not the drawing of it has anything to do with the taste of the beverage after it is mixed in with carbonated water.

A. It certainly does, and while I may not be able to demonstrate it to your satisfaction, it does count for the enormous sale of it at one fountain and small sale at another.

Q. The way it is drawn?

A. Yes, sir; it is a palatable drink at one place and not a palatable beverage at another.

(Witness excused.)

J. W. HARDWICK,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HIRSCH:

Q. Where do you live?

A. Atlanta, Georgia.

Q. What is your occupation?

A. Clothing merchant.

Q. How long have you been clothing merchant Mr. Hardwick?

A. Twenty-three years.

Q. Do you drink Coca-Cola?

A. I do.

Q. About how much on an average daily do you drink and for how long?

A. Ever since they have been making it, about twenty years, and I will average two per day pretty regularly as far as I can state.

Q. As far as you know, has Coca-Cola had any effect on you?

A. None that I can see.

Q. Do you drink coffee and tea?
A. Yes, sir.
Q. Do they have any effect on you?
A. None to speak of.

CROSS-EXAMINATION
BY MR. MILLER:

Q. What is your weight?
A. About a hundred and fifteen.
Q. What is your age, did you say?
A. Forty.
(Witness excused.)

ALFRED C. NEWELL,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Mr. Newell, what is your occupation?
A. Life insurance.
Q. How long have you been in that business?
A. From seven to eight years.
Q. Where do you live?
A. Atlanta.
Q. How long have you lived there?
A. Well, I have resided there for the last six years. Prior to that I lived in Atlanta between '93 and '98; then the rest of the time I resided in New York.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How long have you been drinking it?
A. Well, sir, I have been back to Atlanta—ever since I have been back to Atlanta I presume I have consumed it rather consistently since 1906.
Q. Can you give us about the average number of drinks you take per day of Coca-Cola?
A. Yes, sir; sometimes I drink one a day and sometimes two.
Q. Do you drink as much in the winter as in the summer?
A. I think I do, yes.
Q. What effect, if any, does Coca-Cola have on you?
A. No perceptible effect.
Q. Mr. Newell, do you drink coffee?
A. Yes, sir.
Q. Does that have any effect on you?
A. None that I can notice.

Q. Do you drink tea?
A. Yes, sir.
Q. Does that have any effect on you?
A. None that I can notice. I will amend that by saying in the summer time if I drink a quantity of tea—if I drink two or three glasses of iced tea, it is a little more stimulating than if I take one glass.
Mr. Miller: I do not care to cross-examine him.

CROSS-EXAMINATION WAIVED.

A. Yes, sir.
(Witness excused.)

G. A. HARBOUR,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Mr. Harbour, where do you reside?
A. Atlanta.
Q. What is your business, Mr. Harbour?
A. I am assistant manager of a cigar and soda business and make mechanical illustrations for trade journals.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. For how long have you been taking it?
A. I have—well—
Q. I will ask you first how many you take a day.
A. I drink one to three glasses—I have no regularity about it. I drink from one to three glasses a day.
Q. Well, for how long a period?
A. Well, I have been drinking it since I was about fourteen years old. The last two years I have consumed it more frequently than I did before that time because I have been in the cigar and soda business only the last two years.
Q. Does it have any effect on you, Mr. Harbour?
A. None whatever, from an injurious standpoint, I would say.
Mr. Miller: I object to that answer.
The Court: Yes, that is incompetent. He may state what the effect is.

BY MR. HIRSCH:

Q. Does it have any effect on you?
A. Well, about two years ago when I went into business I weighed about 153 pounds and I weigh about

185 or 186. I say that Coca-Cola has been very beneficial to me.

Mr. Miller: I object to that, as to his conclusions drawn from that.

The Court: Yes, the objection is sustained and the answer excluded.

Mr. Miller: He might have been drinking some other things in the meantime.

The Court: That is, so far as the witness has expressed his opinion about the matter.

BY MR. HIRSCH:

Q. Do you notice Coca-Cola sold at the soda fountains?

A. Yes, sir.

Q. Before this syrup is dispensed, Coca-Cola syrup, I will ask you whether it is strained or not.

A. Yes, sir; it is.

Q. Have you had any experience as to children drinking Coca-Cola?

A. In the two years I have been in business I do not believe I ever noticed a child call for Coca-Cola. I have seen them take it through the offering of their parents, drinking it merely through straws, but other than that I have never noticed a child calling for it.

Mr. Hirsch: You may cross-examine him.

CROSS-EXAMINATION

BY MR. MILLER:

Q. What do you strain it for, Mr. Harbour?

A. Well, we would strain anything—we strain milk.

Q. I know you do, but I am asking you what you strain Coca-Cola for. You don't strain water when you go to drink it out of a spring?

A. Yes, sometimes I do.

Q. Well, what do you strain Coca-Cola for?

A. Naturally in any syrup, especially a syrup that has been put up possibly in barrels or in other receptacles there may be foreign matters that do not go with the syrup; for instance, you take Georgia cane syrup, that comes out of a barrell used before—it would have to be strained to make it absolutely good.

Q. Well, I am not asking you about that, about Georgia cane syrup, but I am asking you about straining this particular Coca-Cola syrup; what do you do that for?

A. I merely mentioned that in that they are both generally packed in the same receptacle and having been used before, there might be parts of the bung or

burlap or substances, splinters, or something that might come inside of the barrel, come off inside of the barrel.

Q. Then these barrels in which Coca-Cola was dispensed in 1909 or were shipped, were second-hand barrels?

A. I do not know that of my own knowledge.

Q. Well, you stated that.

A. I merely stated that from my natural observation of packing anything—most things you use are used over again where it is possible to use them — clothing cases and other things.

Q. Do you state of your own knowledge on that subject now, or do you mean to go on record as saying that the second hand barrels were used in 1909 in shipping Coca-Cola?

A. I have no knowledge along that line.

Q. Well, what is your age.

A. I am twenty-eight.

REDIRECT EXAMINATION
BY MR. HIRSCH:

Q. You strain all of your syrups at soda fountains do you?

A. Well, yes, sir, we do; everything.

(Witness excused.)

E. C. BROWN,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, first being duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Mr. Brown, where do you live?

A. Atlanta, Georgia.

Q. What is your business, Mr. Brown?

A. Drug business; soda and cigars.

Q. How long have you lived in Atlanta, Mr. Brown?

A. About thirty years.

Q. Do you drink Coca-Cola, Mr. Brown?

A. Yes, sir, I do.

Q. How long have you been drinking it?

A. Twenty years, I guess.

Q. Mr. Brown, state whether it has any effect on you?

A. None whatever that is noticeable.

Q. How much Coca-Cola do you drink, Mr. Brown?

A. The amount varies; sometimes one and sometimes two and sometimes none, sometimes three.

Q. At your soda fountain do you strain Coca-Cola

syrup before it is used?

A. Yes, sir.

Q. All syrups are strained at your fountain, then?

A. Yes, sir; all syrups.

Mr. Hirsch: You may cross-examine him.

CROSS-EXAMINATION
BY MR. MILLER:

Q. How many glasses are sold out of a gallon, about eighty-five, of Coca-Cola syrup?

A. I don't know. I never have figured it up.

Q. Well, didn't you tell Doctor Kelber about a year ago that you sold eighty-five out of a gallon?

A. I don't remember.

Q. You don't remember whether you told him that or not?

A. No, sir.

Q. You don't know how many you sell out of a gallon?

A. No sir.

(Witness excused.)

EDGAR DUNLAP,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Where do you live?

A. Atlanta, Georgia.

Q. How long have you been living in Atlanta, Georgia, Mr. Dunlap?

A. About since 1887.

Q. You drink Coca-Cola, Mr. Dunlap?

A. Yes, sir.

Q. How long have you been drinking it?

A. I guess as long as they have been making it; about twenty years, I guess.

Q. About on an average how many do you drink during a day?

A. Two to three glasses a day.

Q. Do you drink the same amount in summer as in winter?

A. It does not make any difference; I do not notice any difference.

Q. Does Coca-Cola have any effect on you, Mr. Dunlap?

A. None that I know of.

Q. Do you drink tea and coffee?

A. Yes, sir.
Q. About how much per day?
A. I seldom ever drink more than one cup of coffee per day and in the summer I drink a great deal of iced tea.
Q. Does it have any effect on you?
A. None that I know of.
Mr. Miller: I do not care to cross examine.

CROSS-EXAMINATION WAIVED.
(Witness excused.)

C. A. REUSCHENBERG,
the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Where do you live?
A. In Atlanta.
Q. What is your business?
A. Insurance.
Q. What is your age?
A. Twenty-three.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How long have you drank it?
A. Off and on I should say for eighteen years.
Q. About how much do you drink?
A. Well, two or three and maybe six glasses a day.
Q. As far as you know, does Coca-Cola have any effect on you?
A. None that I have ever noticed.

CROSS-EXAMINATION
BY MR. MILLER:

Q. Your friends and acquaintances drink it and have drunk it for long, like you do?
A. Yes, sir, they have.
Q. And they have always done this, those that you were ultimately associated with, have they not?
A. Some of them, if they wanted it.
Q. How much do you weigh?
A. A hundred and forty-five pounds net.
Q. I am requested to ask you what you weigh gross.
A. Sir?
Q. I say, what do you weigh gross?
A. A hundred and fifty pounds.
(Witness excused.)

JOHN H. CRAWFORD,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Doctor, where do you reside?
A. Atlanta, Georgia.
Q. How long have you been living in Atlanta?
A. Since 1888.
Q. What is your business?
A. Druggist.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How long have you drank it?
A. Eighteen or twenty years.
Q. How many glasses per day, on an average?
A. Why, I won't drink any sometimes, and then sometimes three or four.
Q. Doctor, as far as you know does Coca-Cola have any effect on you?
A. When at night I work, it helps me from getting sleepy and tired.
Q. That is, when you take it at night when you are working?
A. Yes, sir.
Q. At your soda fountain do you strain the Coca-Cola syrup as well as the other syrups?
A. Yes, sir.
Q. Do you drink tea and coffee?
A. Yes, sir.
Q. Does it have any effect on you, either tea or coffee, so far as you know?
A. It keeps me from getting sleepy.

CROSS-EXAMINATION
BY MR. MILLER:

Q. Does Coca-Cola have any different effect on you in the day time than it does at night,—doesn't it stimulate both times when you take it?
A. No; if I am tired Coca-Cola seems to rest me.
Q. Well, my question was whether it had any different effect on you at night than it had in the day time.
A. I can't say because I don't go to sleep during the day, and I want to stay awake at night.
Q. Don't you know as a physician that Coca-Cola would stimulate you at night it will stimulate you during

the day time?

A. Yes, sir.

Mr. Miller: Is this witness being put on on the same point—I submit if he is he has exhausted the ten witnesses.

Mr. Hirsch. This witness is on the same point.

The Court: How many more have you?

Mr. Hirsch: We have about five or six more.

The Court: Well, we will take then one more witness from Atlanta.

(Witness excused.)

L. J. RICH,

the next witness called in behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION
BY MR. HIRSCH:

Q. Mr. Rich, where do you live?

A. Atlanta.

Q. How old are you?

A. Twenty-six years.

Q. What is your weight?

A. A hundred and seventy-two.

Q. How long have you been drinking Coca-Cola?

A. Six or seven years.

Q. Mr. Rich, were you examined by Drs. Boland and Paulin and Roberts?

A. Yes, sir; I was.

Q. Mr. Rich, how much Coca-Cola do you drink a day?

A. Why, when I am in Atlanta, from two to four glasses.

Q. Does it have any effect on you?

A. No, sir.

Q. Do you drink coffee?

A. One cup of it a day.

Q. Do you drink tea?

A. In the summer time I drink iced tea.

Q. Mr. Rich, in these examinations made by these Doctors, did you make truthful answers to the statements asked you?

A. Yes, sir; I did.

Q. I mean, to the questions that were asked you?

A. I did, absolutely.

CROSS-EXAMINATION
BY MR. MILLER:

Q. How many cups of tea and coffee did you say?

A. I drink one cup of coffee a day in the winter and

one glass of iced tea a day in the summer.

Q. And four to six glasses of Coca-Cola?

A. Two to four.

Q. Do you drink anything else?

A. No sir.

Q. Well, you don't find time to drink any water?

A. No, sir; not very much.

(Witness excused.)

Mr. Sizer: How many did your Honor say we might have of these Chattanooga subjects?

The Court: Take a half a dozen of those that were examined by the physicians.

Mr. Sizer: There is one witness who was not examined by the physicians but who is peculiarly a horrible example and I want to put him on the stand.

The Court: You may examine him.

R. M. WATKINS,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. SIZER:

Q. Will you please state what your experience with the use of Coca-Cola has been?

A. I have been drinking Coca-Cola for about twelve years, and I have taken as high as twenty-four glasses in one day of fifteen hours, and I go sometimes without taking any. I average now, I suppose, about three glasses a day.

Q. What was the condition of your health before you commenced taking Coca-Cola?

A. When I first commenced taking it I used to drink coffee, and I had a spell of acute indigestion and the doctor told me I would have to quit drinking coffee. I asked him if I could continue drinking Coca-Cola and he told me I could ——

Mr. Miller: If this is being tried as a medicinal preparation we have gone into a different line of investigation. I submit it is not competent to relate here the communications between this witness and the physician.

The Court: The exception is sustained and the statements made by the physician are excluded.

BY MR. SIZER:

Q. Without stating what your physician told you, please state whether or not after your sickness you discon-

tinued the use of tea and coffee, or of coffee.

A. Yes, I did.

Q. And what did you then use?

A. I continued the use of Coca-Cola.

Q. Did you while drinking Coca-Cola experience the same symptoms or ill effects that you had while drinking coffee?

A. No, sir; none whatever.

Mr. Miller: We did not bring the coffee matter into this case; they brought it in, we tried to keep it out of the case from the beginning.

The Court: I have admitted it and he was merely asking him whether he had indigestion after he began drinking Coca-Cola after he quit coffee.

BY MR. SIZER:

Q. Did you have indigestion after you commenced drinking Coca-Cola?

A. No, sir; I have not. I drink it regularly.

Q. Is your health—or, what is your condition of health now?

A. I think it is better now than it ever has been.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Mr. Watkins, you chew gum, don't you?

A. Yes, sir; sometimes.

Q. That is done to aid digestion?

A. No, sir; I do not take it for that purpose.

Q. Well, it is supposed to aid or relieve indigestion.

A. The fact of the business is I never chew gum immediately after meals; I chew it before. I chew it more to have something to do than to get the results.

Q. Well, you chew it in the office?

A. Yes, sir, sometimes.

Q. What is your weight?

A. I weigh a hundred and thirty-three.

Q. And what was your father's weight?

A. My father's weight was, at the time of his death, two hundred and twenty, something over two hundred. I have never weighed over a hundred and forty pounds, and I have weighed for several years about a hundred and thirty-three.

Q. I did want to ask you one more question, Mr. Watkins, if you please: Were you a stockholder in the Coca-Cola Company or the bottling company?

A. At one time.

Q. And you sold your stock to a very intimate friend

of yours?

A. Yes, sir, I sold it to a very intimate friend of mine.

Q. You sold it to a very intimate friend of yours?

The Court: That is immaterial.

The Witness: Not as intimate as you are with me, Mr. Miller.

Mr. Miller: I certainly take pleasure in stating that I am your friend.

BY MR. MILLER:

Q. He was a very intimate friend?

A. He was a friend and acquaintance.

Q. He still owns the stock?

A. I suppose so; I do not know.

The Court: I exclude that, as to whether his friend owns the stock.

REDIRECT EXAMINATION,
BY MR. SIZER:

Q. Are you in any way connected with the Coca-Cola business now?

A. No, sir, I am not and have not been for two years.

(Witness excused.)

WILL F. WORLEY,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. You live in Chattanooga, do you?

A. Yes, sir.

Q. What is your business?

A. I am in the laundry business now.

Q. What is your age?

A. Forty.

Q. Do you drink Coca-Cola?

A. Yes, sir.

Q. How long have you drunk it?

A. For the last fifteen years.

Q. How much do you drink a day?

A. I drink from one to three glasses or four glasses.

Q. Have you frequently drunk more than that in a day?

A. Yes, sir; previous to that I was in the drug and soda fountain business.

Q. How much Coca-Cola did you drink then?

A. Well, I don't know, I just liked it better than any other drink. I drank it occasionally at fountains when I was thirsty.

Q. Could you approximate how much you drink a day, or did at that time?

A. Five or six glasses, I guess.

Q. And for how long did you drink it at that rate?

A. Well, three or four years.

Q. Did you ever experience any ill effects from drinking Coca-Cola?

A. I never did that I can tell.

Q. Did it ever have any effect on you?

A. None whatever; just liked it better than other drinks.

Q. Were you one of the hundred subjects examined by Doctor Holtzclaw and Doctor Brown and Doctor Wert last summer?

A. Yes, sir.

Q. Were the answers you gave to the questions asked you by them truthful?

A. Yes, sir; they were.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Who procured you to go up and be examined, Mr. Worley?

A. How is that?

Q. I say, who asked you to go up and be examined?

A. Mr. Chapin asked me to go up.

(Witness excused.)

LOUIS L. HARRISON,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. You live here in Chattanooga, do you?

A. Yes, sir.

Q. What is your business?

A. I am a soda dispenser.

Q. At what place?

A. At George K. Brown & Co.

Q. Where is that located?

A. Seventh and Market.

Q. Is that what is known as the Palace?

A. Yes, sir.

Q. How long have you been connected with that establishment?

A. About four and a half years.

Q. Do you dispense Coca-Cola there?

A. Yes, sir.

Q. In addition to Coca-Cola, do you dispense other fountain beverages?

A. A good many, yes.

Q. Have you noticed whether children — the habit of children with respect to drinking Coca-Cola?

A. I know of no child that drinks Coca-Cola regularly.

Q. What do they drink?

A. They generally get milk chocolate or ice cream or something, that they can get the most of.

Q. Have you observed people that frequent your soda fountain down there with respect to the number of glasses that they will take in the course of a day?

A. We have customers that come in about — they generally come of a morning, some few of them come back again in the evening just now, and in the summer time they drink perhaps a little more.

Q. That would be how many glasses a day?

A. About one or two glasses during the cold weather.

Q. And during the summer they increase it how much?

A. Three.

Q. You drink Coca-Cola yourself?

A. Yes, sir.

Q. To what extent?

A. I drink it, when I drink it I drink from one to four glasses a day.

Q. You drink it, from one to four a day?

A. Yes, sir.

Q. What effect does it have on you?

A. It does not seem to have any, I just drink it to quench my thirst.

Q. Do you ever have a "double-header" called for?

A. We have a drink that we mix with Coca-Cola syrup and pepsin, one of our mixtures, we mix it about half and half, it is also called "Half-and-half" and "Double-header."

Q. Does that contain the same amount of Coca-Cola as the ordinary drink of Coca-Cola straight?

A. No, sir; a good deal less.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Now, if a man comes in and calls for a Coca-Cola or for a "Dope" or for a "Coke," you understand, of course, he gets Coca-Cola?

A. Yes, sir.

Q. And you serve it that way?

A. Yes, sir.

Q. What do you mean by saying some of them drink it regularly?

A. Well, people going to work, a good many of them pass down Seventh street at different times of the morning, sometimes they do not come in and sometimes they do. What I call a regular customer is one who comes in three or four times a week.

Q. You have no children that come in that you would call regular customers?

A. No, sir; none at all.

(Witness excused.)

J. W. EVANS,

the next witness called on behalf of the Claimant and Intervenor, The Coca-Cola Company, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Mr. Evans, are you one of the hundred subjects who were examined by Doctors Wert, Brown and Holtzclaw last summer?

A. Yes, sir.

Q. What is your age?

A. Twenty-five.

Q. What is your business?

A. I am receiving teller at the First National Bank.

Q. Do you drink Coca-Cola?

A. I do.

Q. How much do you drink a day?

A. Why, one sometimes; not more than three or four.

Q. You drink the same amount every day?

A. No, sir.

Q. Does it have any effects on you as far as you know?

A. No, sir.

Q. For what purpose do you drink it?

A. Nothing but to quench my thirst.

Q. How long have you drank it?

A. Steadily for five years.

Q. Is your health good?

A. Yes, sir.

Q. Have you recently taken out any life insurance, been examined for any?

Mr. Miller: I object to that.

The Court: Do you want to lay grounds as a basis for calling the physician who examined him?

Mr. Sizer: I do not know whether he has taken or made application for any.

BY MR. SIZER:

Q. Have you been examined for life insurance recently?

A. A year ago.

Q. Did you get a policy?

A. Yes, sir; I did.

The Court: You can prove the name of the physician, then if you want to prove by the physician that he examined him, you can do so.

BY MR. SIZER:

Q. Who was the physician that examined you?

A. One physician, Dr. G. Manning Ellis ——

The Court: I think the examination of the physician would be immaterial.

Mr. Sizer: We did not intend to call him — I submit, may it please your Honor, in view of what Doctor Johnston testified as to the kind of examination applicants for life insurance are subjected to, I think we can prove he has made an application and been examined and allowed a policy.

The Court: I do not think it is competent. He was not asked about Coca-Cola at all on that examination.

BY MR. SIZER:

Q. Were the answers that you made to the three physicians who asked you the questions last summer, — were they truthful?

A. Yes, sir.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Who procured you to go up to be examined by these three men last summer?

A. Mr. Thomas.

Q. B. F. Thomas?

A. Yes, sir.

Q. He is a patron of your bank?

A. Yes, sir.

The Court: What did the witness say?

The Stenographer: The answer was: "Yes, sir."

(Witness excused.)

EMIL WASSMAN,

the next witness called on behalf of the Claimant and Intervenor, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Do you live in Chattanooga?

A. Yes, sir.
Q. What business are you engaged in now?
A. Tax assessor of Hamilton County.
Q. How long have you been tax assessor?
A. About six years.
Q. How long have you lived in Hamilton County?
A. Since 1870.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How much?
A. On the average three or four glasses a day; sometimes as high as five.
Q. How long have you been drinking it?
A. Before they began to bottle it; I do not know how long that has been.
Q. You mean before they began to bottle it you commenced to drink it?
A. Yes, sir.
Q. Do you remember about how long before?
A. No, sir.
Q. It has been a number of years, has it?
A. Yes, sir.
Q. What effect does it have on you, Mr. Wassman?
A. None at all.
Q. Have you ever formed any craving for it?
A. No, sir; nothing particularly.
Q. Have you any desire to increase the amount you take daily?
A. No, sir. I have not.
Q. Do you drink the same amount every day?
A. No, sir. Some days I go without drinking it at all.
Q. Do you drink more in the summer than you do in the winter?
Mr. Miller: I object to that — no, I don't object.
The Witness: What was the question?

BY MR. SIZER:

Q. I say, do you drink more in the summer than you do in the winter?
A. Yes, of course, in hot weather I drink more.
(Witness excused.)
Mr. Miller: I think, if your Honor please, the list of ten witnesses has been more than exhausted, and for that reason I move to exclude this. I do not object to cross-examining Mr. Wassman; if there is going to be a limit of ten witnesses put on any point, I think that his would have to be excluded.
The Court: I did not intend to lay down any iron-clad

rule about that.

Mr. Sizer: This is only three; I think your Honor said we might have six from Chattanooga.

Mr. Miller: Mr. Sizer must have been taking too much of the Coca-Cola.

The Court: I said six of that one hundred list. I did not understand this witness was in the hundred list.

Mr. Sizer: Were you one of the hundred subjects examined by the doctors?

Witness Wassman: No, sir.

Mr. Sizer: Then we will not count him in among the six, then.

The Court: I do not want to draw any hard and fast rule. I think you are getting through very rapidly with them. I do not think it is very material, but they are going through very rapidly.

Mr. Miller: All right.

CROSS EXAMINATION.

BY MR. MILLER:

Q. Mr. Wassman, you can approximate the time when you began to drink Coca-Cola, can you?

A. Only in the way I mentioned.

Q. Do you think it has been as much as fifteen years?

A. I cannot tell the number of years. I began drinking it before they began to bottle it.

Q. That is the only means you have of ascertaining whether it has been one year or fifteen years?

A. Well, I began to drink it in Atlanta when I worked there. I worked in Atlanta ten or twelve years ago, I believe, or a little longer.

Q. That was the beginning of your drinking of it?

A. Yes, sir.

Q. Now, as a matter of fact it is served to children that are as young as four or five years of age, to your certain knowledge?

A. What is the question?

Q. I say, as a matter of fact it is served to children as young as four or five years of age, is it not?

A. Yes, sir.

RE-DIRECT EXAMINATION.

BY MR. SIZER:

Q. Do you know, Mr. Wassman, whether children of that age habitually take it, or frequently take Coca-Cola?

A. Well, I have a child between four and five years of age that I let him drink it, I have never seen any bad effects on him, and for that reason I let him drink it.

Q. What is the condition of his health?

A. Well, I should think he is a very healthy child. He was never sick in his life except with the whooping-cough.

Q. Is Doctor Reisman your family physician?

A. Yes, sir.

Q. You say you let this boy drink Coca-Cola?

A. Yes, sir.

Q. Do you know of any other child in the city who drinks it?

A. That is the only one.

(Witness excused).

Mr. Candler: I will now read the following depositions:

D. A. ROSENTHAL,

the next witness, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION.

BY MR. McALLISTER:

Q. Where do you live?

A. Knoxville.

Q. What business are you in?

A. The drug business.

Q. Wholesale or retail?

A. Retail.

Q. How long have you been in that business?

A. About thirty years—do you mean as proprietor or clerk, or all?

Q. In the retail drug business?

A. Thirty-eight years.

Q. Twenty-eight years, you say?

A. No, thirty-eight years.

Q. State whether or not you operate a soda fountain at your place of business in connection with your drug business?

A. I do.

Q. Name some of the principal drinks that you sell at your soda fountain, doctor.

A. I sell all the soda water drinks—ice cream sodas, coca-cola, lemonade, limeade, and all the regular drinks.

Q. Are you familiar with a drink known as coca-cola?

A. Yes, sir.

Q. How long have you been familiar with it?

A. About twenty years.

Q. Where and by whom is it made, doctor?

A. Well, I suppose it is made by the Coca-Cola Company, of Atlanta, Georgia.

Q. Where do you get it?

A. I get it through the jobber in Knoxville.

Q. How long have you been handling coca-cola at your

fountain, doctor?

A. I have been handling it ever since I have been in business.

Q. How, as a drink, is it ordinarily served at the fountain?

A. Sir?

Q. I say, how is the drink ordinarily served at the fountain, of coca-cola?

A. Well, from one to one and a half ounces of coca-cola put in seven ounces or a glass of carbonated water, containing from about five and a half to six ounces of carbonated water to one or one and a half ounces of the other.

Q. Doctor, has there been within your knowledge any other drink, beverage or food product known as coca-cola placed on the market except that made by the Coca-Cola Company, of Atlanta, Georgia?

A. Not that I know of.

Q. To what extent has coca-cola been advertised during your acquaintance with it?

A. Very extensively.

Q. What is your observation, doctor, as to the average number of drinks of Coca-Cola per day that the average man drinks of coca cola who drinks it at all?

A. Well, I couldn't say because I don't pay any attention to the soda fountain, that is, I don't pay any attention to the customers who come in there.

Q. Well, could you state, doctor, to what extent children are in the habit of drinking coca-cola?

A. Very rarely.

Q. How long has coca-cola been on the market so far as you are informed?

A. Well, I believe about twenty-one years.

Q. How long sir, did you say, twenty years?

A. About twenty-one years, I think.

Q. About twenty-one years?

A. That is my recollection as to when it was first brought to Knoxville.

Q. What has been your observation as to whether or not the drinking of coca-cola creates in a person drinking it a craving or desire for increased quantities of coca-cola or increased number of glasses?

A. Well, I don't believe it has had that effect.

Q. You have never observed that it has had that effect?

A. No, sir.

Q. And do you drink it yourself, doctor?

A. Very rarely.

Q. Do you ever drink it?

A. Yes sir, I drink perhaps once or twice a month a glass; I don't drink anything at all and that is the reason I never think of that.

Q. Now, has there been any case within your knowledge of anybody being injuriously affected by the use of coca-cola, doctor?

A. No sir.

CROSS EXAMINATION.

BY MR. MILLER:

Q. You are a practitioner of medicine?

A. No sir.

Q. Are you acquainted with Dr. Gooding who has just left the stand as a witness for the claimant in this case?

A. Yes sir.

Q. Is he a practitioner of medicine?

A. I do not believe so; I understood some years ago that he was registered as a practicing physician, but I do not believe he practices.

Q. Now, you say that at your fountain you serve or are supposed to serve from one to one and a half ounces of the coca-cola syrup in seven ounce glass, the remainder of the contents being carbonated water?

A. Yes, sir.

Q. Is there any graduate on this glass that you use in serving it?

A. No, sir, but there is on the pump.

Q. On what?

A. On the pump from which the coca-cola is drawn.

Q. What is the graduate on the pump?

A. Well, to draw so much and no more.

Q. And how much, doctor?

A. About an ounce or an ounce and a half.

Q. It is regulated so as to get an ounce and a half into a glass?

A. Yes sir.

Q. Is it sometimes served one ounce in a glass for the reason that the boy in pulling up the pump don't pull the pump all the way and won't draw a full ounce and a half?

A. If they touch it twice, that is, if they give two pressures on the pump that would result.

Q. Bound to get over?

A. Get a double quantity, yes sir, he would.

Q. When a customer comes in and calls for a double header, what do you understand by that?

A. Well, I never heard of it.

Q. You don't serve at the fountain yourself?

A. No sir.

Q. But if he would call for a double header you would

understand that was a double quantity.

A. Yes sir, I suppose so, but he would not get it.

Q. What did you say, doctor?

A. I say he would not get it.

Q. And why not?

A. He is supposed to pay a nickle for the glass, and he would not pay ten cents for a double header.

Q. But if he got one ounce he would not get a nickle's worth because he would be entitled to an once and a half?

A. No sir, he is entitled to an ounce and a half or an ounce, and he would get a nickle's worth with an ounce, from an ounce to an ounce and a half is all he is supposed to get or to be given.

Q. All that is supposed to be given?

A. Yes sir, for a nickle.

Q. Now, why do you say that is all that is supposed to be given? What is the basis of that supposition?

A. It is my regulation of the sale of the coca-cola at that fountain.

Q. And you instruct your boys there that are serving to serve one ounce or from that up to an ounce and a half of coca-cola for five cents?

A. Yes sir.

Q. Now, if a customer were to ask for two glasses or a double portion of the mixture and pay the increased price of course you would give him from two to three ounces of coca-cola?

A. I hardly think so because it is never called for to my knowledge.

Q. You don't serve there yourself, and you don't know how many glasses the average consumer takes in a day for that reason?

A. No sir.

Q. Well, you don't know what does take place at the fountain?

A. I know pretty nearly what is going on, but I don't see all who come in.

Q. Then why is it you cannot give us the daily quantity consumed by the average individual?

A. Because I cannot keep track of every customer that comes in there; my place of business is different from the small stores, at least from one to two thousand people at the counter, and I don't keep track of every person that comes in and how many drinks they take.

Q. And you don't want to say for that reason that it is not sometimes called for stronger by some persons than by other persons?

A. I have never seen it called for that way and I have

never seen the boys give a double tap of the pump.

Q. Did you ever observe a person call for dope when he calls for coca-cola?

A. No sir, I can't say.

Q. Do you mean to say you have never heard coca-cola termed dope?

A. Yes sir, I have.

Q. And where did you hear it called dope?

A. I have heard the boys call it dope, and ask if they drank dope.

Q. Then you do know that it is called for under the name of dope?

A. No sir, I couldn't say it was called for under the name of dope.

Q. Now, where was it that you heard it called for under the name of dope?

A. I didn't say that; I have heard it called dope.

Q. And by whom?

A. By different men and boys who drink it.

Q. And if dope was called for you would understand that coca-cola was expected?

A. Not necessarily.

Q. What would you understand was expected?

A. I would not know what they would want; I would not give them anything under the name of dope.

Q. You would not give anything—

A. (Interrupting) No sir; if I waited on the counter and he asked me for "dope" I would not give him anything; I have heard it called under that name.

Q. You have heard coca-cola referred to as dope?

A. Yes sir.

Q. What do you mean when you say children rarely drink it; what age persons do you refer to?

A. I mean anyone under fifteen years of age.

Q. How about shop girls, are they accustomed to patronizing your fountain and drinking coca-cola?

A. Yes sir, a few of them.

Q. Do you know the contents of coca-cola syrup?

A. No sir.

Q. Do you know whether or not there is any caffeine in it?

A. No sir, I do not except as they state in their advertisement—

Q. Is coca-cola recognized as a drug?

A. It is recognized as a drink.

Q. As a drink?

A. Yes sir.

Q. If an individual presented himself at your fountain

and wished coca-cola, of course you would sell it at five cents a glass?

A. Yes sir.

Q. And if he wished two glasses you would sell him two?

A. Yes sir, I suppose so.

Q. And if he came in and wanted a dozen a day, you would sell them?

A. Without doubt.

Q. How was that?

A. Without doubt.

Q. So that it depends entirely on whether or not he has the price to pay as to how many glasses an individual may consume during a day?

A. I don't know whether or not that has anything to do with it—if he didn't have the price he could not get it, without he ran an account with me.

Q. But if he did have the price he could get as many as he wanted?

A. Yes sir, he could.

Q. So, during the time that you have handled coca-cola you have never heard a double header called for?

A. No sir.

Q. And you have never heard dope called for?

A. No sir, not that I can say—I have no recollection of it.

Q. Where is your place of business in your store?

A. At the corner of Gay and Clinch streets.

Q. I mean, where do you stay when you are in your place of business with respect to the fountain?

A. Principally in the office.

Q. What did you say?

A. Principally in the office, about half way to the back of the store.

Q. Is that behind the prescription partition?

A. Yes it is.

Q. Where your view is obscured?

A. Yes sir.

Q. You cannot see and hear what goes on at the fountain very well?

A. No sir, not very well; I can see the end of the fountain is about all.

Q. You have paid no special attention to the quantity of drinks that are served, that is relatively speaking, as between coca-cola and other drinks that are served at your fountain?

A. No sir, I do not, except judging from the bills that I pay and the amount of sales.

Q. As a matter of fact, coca-cola, or the sale of coca-cola predominates very much as against the other drinks, does it not?

A. Well, if you mean any individual drink it does, but coca-cola taken in reference to the whole business would average about twenty-five per cent of the business, I think.

A. B. TADLOCK,

the next witness called, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION.

BY MR. HIRSCH:

Q. Doctor, what is your occupation?

A. I have been a physician.

Q. How long have you been a physician?

A. I am retired now.

Q. How long have you been a physician?

A. Oh, since the beginning of the Civil War.

Q. Where have you practiced your profession?

A. Mostly here and Cincinnati.

Q. What institutions are you a graduate of, doctor?

A. Cincinnati College of Medicine and Surgery.

Q. And when did you graduate from that college?

A. It was in 1861 or 1862; I won't say for sure; in 1862 or may be in 1863, I guess.

Q. And you have been practicing since that time?

A. Yes sir.

Q. Now, when did you retire, doctor?

A. From active practice, I might say, I retired about 1891 or 1892.

Q. Doctor, do you use any soft drinks?

A. Yes sir.

Q. If so, what?

A. I use lemonades and the coca-colas and limeades, such as they have at drug stores.

Q. How long have you known of coca-cola doctor?

A. Well, I don't know how long, but ever since it came into use.

Q. About how long has that been, have you any idea?

A. Hard to say, I don't know.

Q. Well, about?

A. I will say fifteen or twenty years, or may be twenty-five.

Q. How long have you been a user of coca-cola?

A. How was that?

Q. How long have you been a user of coca-cola—I mean drinking it—about how long?

A. It has been from fifteen to twenty years; I would not be certain at all about that.

Q. What has been your experience with coca-cola, drinking coca-cola, so far as yourself is concerned, doctor?

A. Well, my experience has been limited principally just to get a cold drink, a nice cooling drink.

Q. Did you ever try the effects of coca-cola?

A. I thought I did.

Q. In what way?

A. By drinking a quantity of it one evening; I believe I drank eight glasses one evening, to see what effect it would have on me.

Q. And what effect did it have on you?

A. I didn't see any more than just a cooling beverage.

Q. Ordinarily, how many glasses of coca-cola do you take a day?

A. Well, sometimes I take two and sometimes I don't take one a week, and sometimes one in a month, but generally if I am where I get it I will say if it is a hot day I will take from one to three.

Q. Well, how about on a cold day?

A. None at all.

Q. Do you experience any craving or desire for coca-cola?

A. No sir, not a bit, sir.

Q. Do you experience any desire to increase the quantity you generally take?

A. Not a bit more than any other drink—you asked me if I noticed a craving—a craving for a cold drink of lemonade or limeade, or anything of that kind.

Q. How old are you, doctor?

A. About seventy-five, lacking a few months.

CROSS EXAMINATION.

BY MR. MILLER:

Mr. Miller: Reserving exception to the competency and relevancy of the foregoing testimony, the Government cross-examines as follows:

Q. What year was it that you drank those eight glasses, doctor?

A. I can't say what year it was; I think it was several years ago, though.

Q. Probably how long ago, how many years?

A. I would guess it at from eight to twelve years ago.

Q. Now, isn't it a fact that you are very feeble, and that you were assisted to the witness stand by one of the counsel who is present?

A. How is that?

Q. Isn't it a fact that your present condition, your physical condition is such that you were assisted to the witness stand, led around by one of the assisting counsel who is present today?

A. No sir, unless you consider my eye condition a physical condition; I am led—my wife is here, she came with me because of my eyesight, not because I am so feeble at all.

Q. Then didn't one of the assistant counsel, who is present lead you from the back part of the court room around to where you are now sitting?

A. Yes sir, he came along on one side of me, and I think my wife on the other side; I had to have somebody to show me in.

Q. And out of consideration for your condition you are not required to take the elevated place for the witness but you were permitted to sit down off the ordinary stand where the witness sits and on the floor are you?

A. I can't see, and I don't know, sir; I am sitting I suppose where they asked me to.

Q. Now, your best recollection is that those eight glasses of coca-cola were taken by you from eight to twelve years ago?

A. Somewhere along there, several years ago, I can't tell exactly.

Q. And that was where?

A. How?

Q. At whose place of business?

A. No one place, several places.

Q. In what city?

A. This city.

Q. You mean in Knoxville, Tennessee?

A. Yes sir.

Q. As a physician, a retired physician, do you say that caffeine is a drug?

A. How was that?

Q. I say, as a physician, a retired physician, do you say that caffeine is a drug? I am asking you now from your medical experience, medical knowledge, with respect to caffeine. You say you are a retired physician, and I ask you whether or not the substance "caffeine" is a drug?

A. I didn't say so.

Q. I know, but you are on oath, and I want you to say either it is or it is not?

A. Caffeine?

Q. Yes.

A. Caffeine is a drug; cocaine is a drug.

Q. What effect does caffeine have on the human system?

A. It is an alterative and a tonic, and considered a sedative drug rather—I do not want to say sedative, I can't think of the word I would like to say there—antiseptic, I had better say.

Q. Now, can you name any medical treatise or authority that says it is an alterative and antiseptic drug?

A. No, I cannot.

Q. You don't remember of having ever read that in any treatise or medical work of any kind?

A. No sir, I do not recollect it, whether I did or didn't; I certainly have read something about it, though.

Q. For what conditions or under what conditions did you prescribe caffeine when you were in the practice of medicine?

A. Rather as a nerve tonic.

Q. What effect did it have on the nerves? What did you expect it to have?

A. What effect on the nerves?

Q. Yes.

A. Tone them up.

Q. How much would it require to tone them up?

A. It has been so long ago I have forgotten the dose of caffeine.

Q. Are you acquainted with the publication known as the United States Pharmacopea?

A. Yes sir.

Q. What is the prescribed dose according to that of caffeine?

A. I don't remember now.

Q. It is a half grain, to refresh your recollection, isn't it?

A. It is a small amount; I was going to say from a half to three quarters of a grain, or a grain, but I don't remember, and I won't say now.

Q. Then from a half to three-quarters of a grain of caffeine would be considered a dose?

A. Yes.

Q. And that was given by you to tone up the nerves when they were in a depleted condition?

A. Yes sir.

Q. And by that you mean to stimulate the nerves?

A. Yes sir.

Q. To increase activity?

A. Yes sir, that is what the therapeutic effects are considered.

Q. How, in a normally healthful person, where the nerves are in good condition, and already acting properly and you would stimulate the nerves by giving one or more

grains of caffeine, that would have the effect of over-stimulating, would it?

A. Well, it might.

Q. Then, if a person were suffering from nervous debility, why caffeine would stimulate them and serve to bring them up towards the normal point, or what they should be, as you understand it?

A. Yes sir.

Q. And that is the purpose for which you would give it?

A. Yes sir.

Q. You would not prescribe it for a normal health person at all?

A. No, I don't know as I would; there would be no use of it.

Q. And the fact is that in a normal healthy person the effect being of overstimulating the nerves, the effect would not be beneficial would it?

A. It would not be beneficial.

Q. Were your nerves at the time you took these eight glasses of coca-cola debilitated?

A. No, sir, not that I know of; I was in my usual health and on the streets.

Q. Then you would not have taken by way of experimenting if you had known it eight grains of caffeine at that time would you with a view of benefitting yourself, doctor?

A. I don't think I would.

Q. Now, you say you are seventy-five years of age?

Q. I will be next March.

Q. And you retired from the practice of medicine about twenty or twenty-one years ago?

A. Virtually so.

Q. And you consumed these eight glasses of coca-cola sometime after retiring from practice?

A. Yes sir, I think it was since then.

Q. What did you say?

A. I think it was since that, pretty sure it was, I don't think it has been over ten or twelve years or eight or ten years, somewhere along there.

Q. If you were prescribing caffeine for a person who was suffering with nervous debility, what would be the average dose per day that you would prescribe?

A. My recollection now that I would be guided by is that I would not prescribe more than a grain at a dose about two or three or four times or twice or three times; I don't think I would prescribe exactly that, I would not go over that.

Q. Now, what do you think you would prescribe, if not prescribe that?

A. You asked me for the quantity of the medicine.

Q. I am asking you about a person who was suffering with run-down or debilitated nerves, and you were prescribing caffeine, and I asked you for its beneficial effect —now, in what doses would you prescribe it, over what period of time and how often per day?

A. According to the patient; I think it would be somewhere between a half grain three times a day and a grain.

Q. And over what period of time, until he showed signs of improvement?

A. Probably a week or ten days—three or four days; if he seemed to get all right, then I would quit it in one day.

Q. What is the effect of caffeine on the brain, doctor?

A. I don't know what the pathological effect would be; it would tend to stimulate the brain.

Q. Sir?

A. Stimulate the brain, and some claim that it keeps one from sleeping, and others claim it causes sleep; coca-cola don't act either way with me, don't make me sleep or keep me awake.

Q. Do you know of any reputable medical authority that teaches or holds that it has a depressant effect, I mean, you say that it produces sleep?

A. I can't recall any, it has been so long since I have read anything on that subject.

Q. You know it is generally accepted by the medical profession, however, that it acts as or does incline one to sleeplessness and wakefulness in that it stimulates the brain?

A. That is my understanding; I used the word "antiseptic" awhile ago; I meant as a disinfectant; I have heard some say it was the best disinfectant we have. I am rather inclined to think that coffee or caffeine is more or less a disinfectant to the stomach and bowels.

Q. You are an advocate then, I take it, of coffee drinking?

A. How was that?

Q. You are an advocate of coffee drinking?

A. Yes, I am.

Q. You think it has a good effect on the human system?

A. Yes sir.

Q. And likewise you would be an advocate of caffeine consumption?

A. As a medicine.

Q. Well, take it in soft drinks, do you mean by that

that it would have a beneficial effect on the human system?

A. If one wanted a cold, good cold drink, I don't think it would have any evil or any good effects any more than any cold drink beverage, unless used to or in an excessive amount; I think one could kill himself drinking water or coffee either.

Q. Now, you say that unless it be used in excessive amounts it would have a non-beneficial effect. If it be true that caffeine stimulates the brain and over-stimulates the nerves, as you say in a normal healthy person, then will you please tell us what beneficial effect it could or would have on a normal healthy person, if he should commence to use caffeine either in coffee or in soft drinks, cold drinks, as you put it?

A. So far it is a food just like iron—so far it would act as a food to increase digestion and assimilation—

Q. (Interrupting) But cocaine has largely the same properties and effects as caffeine, has it not, according to the medical authorities?

A. I don't know what the medical authorities are so well as my own experience—I would rather think that cocaine—I would rather think it has rather a quiet effect—a quieting effect on the system more than coffee or caffeine—I think it has more of a sedative effect on the brain than a stimulating effect.

Q. Isn't it a fact that cocaine makes the user wild and delirious at times?

A. I have never seen any of that effect, sir, only have heard of it.

Q. Well, your understanding it, and from your medical knowledge, that it puts one almost in the condition of having delirium tremens?

A. Do you mean coca-cola or cocaine?

Q. Cocaine.

A. Yes, that is my understanding of the effects of cocaine.

Q. That is the effect of that drug which you say acts as a sedative?

A. Bound to do it as a beverage.

Q. Then, taken as a beverage, cocaine would act as a sedative?

A. Yes sir.

Q. Now, in what form would you take it so as to produce that condition akin to delirium tremens?

A. In what form? I would take it as cocaine.

Q. It would be cocaine no difference whether you took it in a beverage or how you took it, you would get the effect of cocaine just the same?

A. I don't know about that, sir; I can't know about that, sir; there is a difference between the effects of a drug in its chemical and analyzed condition, and in its crude condition; I heard a very eminent physician say once that he could get better effects from Peruvian bark in tea than he could from quinine in many cases, to break up malarial fever, and I believe that is so in some cases.

Q. Now, do you know of any neutralizing substance in the ordinary corbonated water that would serve to reduce the effects of either cocaine or caffeine on the human system or decrease or modify the effects, and if so, what is it?

A. I don't know that I understand your question as to that.

Q. My question is, if you give a substance, if you give caffeine or cocaine straight as a drug without serving it in carbonated water, and then you give it in a glass of carbonated water, what, if any difference is there in the effect of it, assuming that the same quantity is taken?

A. It would be a supposition of mine to answer that question.

Q. You are not prepared to say then that there would be any difference in the effect?

A. Whether given as cocaine powder or as a liquid?

Q. Or given as a liquid with the ordinary carbonated water?

A. I would say it would be more rapid in carbonated water or anything of that sort.

Q. The effect of it would be more marked?

A. Yes sir.

Q. And be absorbed quicker?

A. Yes sir, I would think so, I would think so.

RE-EXAMINATION.

BY MR. HIRSCH:

Q. Doctor, outside of the condition of your eyes, are you for a man of seventy-five years of age in good health?

A. I can say that I am in pretty good health, except for a very serious cough; I have had it for a number of years, and it troubles me a good deal.

Q. What other beverages do you know of, if any, that contain caffeine?

A. Sir?

Q. I say, what other beverages do you know of, if any, that contain caffeine?

A. I don't know only as I understand it that coca-cola has caffeine. Did you say that contain caffeine?

Q. Yes.

A. Now ask the question again, please.

Q. Does coffee contain caffeine?
A. Yes sir.
Q. And what about tea?
A. Thein is the essential property of tea. I don't or can't say for certain whether any caffeine in tea or not, I don't think so, but thein.
Q. How much do you drink a day, doctor?
A. About two or three cups a day, one to three cups.

RE-CROSS-EXAMINATION.
BY MR. MILLER:

Q. Why did you retire from practice, doctor.
A. Because my eyes forced me to.
Q. Your eyes?
A. The loss of vision?
Q. How is your digestion?
A. Bad.

H. B. BRANNER,

the next witness called, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION.
BY MR. McALLISTER:

Q. What is your business Mr. Branner?
A. I am in the banking business here, sir.
Q. Here in Knoxville?
A. Yes sir.
Q. With what bank?
A. Third National Bank.
Q. What is your connection with that bank?
A. President of it.
Q. Mr. Branner, do you know of—first I will ask you, do you or not ever patronize soda fountains?
A. Yes sir.
Q. What drinks do you chiefly call for at soda fountins?
A. Coca-cola has been my drink; that and occasionally some grape juice.
Q. How is coca-cola ordinarily served to the consumer from the counter, Mr. Branner?
A. It is a syrup put in a glass, and then charged water put in on it, and served like they serve a glass of soda water.
Q. In about what proportion, do you know?
A. I should say from along about one-fifth of it.
Q. Do you know where and by whom the syrup is made, the coca-cola syrup, is made, Mr. Branner?
A. At Atlanta, Georgia, by the Coca-Cola Company.

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Volume IV.

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1915.

No. 562.

THE UNITED STATES, PLAINTIFF IN ERROR,

vs.

FORTY BARRELS AND TWENTY KEGS OF COCA COLA, THE COCA COLA COMPANY OF ATLANTA, GEORGIA, CLAIMANT, AND INTERVENOR.

IN ERROR TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

FILED JULY 16, 1915.

No._____

UNITED STATES CIRCUIT COURT OF APPEALS

FOR THE SIXTH CIRCUIT.

THE UNITED STATES, *Appellant*,

vs.

FORTY BARRELS AND TWENTY KEGS COCA-COLA, *Appellee*.

FROM THE DISTRICT COURT OF THE UNITED STATES,
SOUTHERN DIVISION,
EASTERN DISTRICT OF TENNESSEE.

RECORD
PART FOUR

JAMES B. COX, United States District Attorney, Knoxville, Tenn.,
W. B. MILLER, Special Assistant United States Attorney, Chattanooga, Tenn.,
For Appellant.

J. B. SIZER, Chattanooga, Tenn.
HAROLD HIRSCH, Atlanta, Ga.
For Appellee.

MACGOWAN-COOKE, CHATTANOOGA

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Q. How long have you been acquainted with the drink, Mr. Branner?

A. I guess about seven or eight years since I took the first of it.

Q. Do you know how long the drink has been on the market?

A. No sir.

Q. State whether or not, please, if you know, whether there has ever been any other drink, beverage or food product put on the market under the name of coca-cola except that manufactured by the Coca-Cola Company, Atlanta, Georgia?

A. All I ever heard of.

Q. To what extent has this drink been advertised within your knowledge, Mr. Branner?

A. Well, sir, in all of my travels I have seen it, I believe, at every place I have ever been.

Q. You mean you have seen it advertised?

A. Yes sir.

Q. Have you travelled pretty frequently?

A. Yes, I have travelled considerably.

Q. Mr. Branner, about how many glasses of coca-cola a day, on an average, do you drink?

A. Well, I never drink over about two; some days one, and then on some days, cold days, I don't take any at all; in the summer time I generally take about two glasses a day.

Q. Is it your experience, Mr. Branner, or have you observed from others, that the drink coca-cola creates—I will put the question this way: Is it or not your experience or have you not observed in others that the drinking of coca-cola creates a craving or desire on the part of the person drinking it for increased quantities of coca-cola or increased number of glasses?

A. It has never been so in my case; I don't know how it has been with other people; it has never been with me; it never has had any more effect with me than any other glass of soda or soda water.

Q. Yes, has there ever been a case within your knowledge of anybody being injuriously affected by drinking coca-cola?

A. No sir, not that I know of.

CROSS-EXAMINATION.

BY MR. MILLER:

Q. Who is the jobber, or jobbing firm here in Knoxville through whom this coca-cola syrup is dispensed?

A. Well, I don't know, sir, who the jobber is—well, I

said no—I will say this, that barrels come here—I see them occasionally—when they carry it in at Mr. Gooding's and some others, from Atlanta, that is where they said they bought it.

Q. You don't know who the distributing agent or jobber is at Knoxville?

A. No sir.

Q. Now, it is frequently termed "dope" by people who go to the fountain who call for it at the fountain?

A. Yes, I have heard people say, "Give me a glass of dope."

Q. And the dispenser very readily understands what is meant by that and serves coca-cola, as you understand it, Mr. Branner?

A. Yes sir.

Q. How is it drawn from the fountain, Mr. Branner?

A. It is kept in some receptacles that the other syrups are at Gooding's fountain; it is in the same sort of receptacles that he keeps his syrups for soda water, different syrups of that sort.

Q. And the boy goes there and touches an automatic sort of spring and that pumps a certain quantity of the coca-cola syrup?

A. Yes sir.

Q. Is there any graduate on the glass or otherwise by which you can tell exactly how much is being served?

A. No sir, on none that I have ever drank out of.

Q. And of course in serving it in that way a variable quantity is served as there is no method by which the exact proportion or portion can be drawn each time?

A. No, but my experience has been in there that it is about the same in each glass that I get all the time.

Q. Of course you have paid no very particular attention to that?

A. No sir.

Q. And of course sometimes in touching one of these flat pieces or automatic springs, the boy does not get a sufficient quantity, and if this occurs he can touch it again when he gets ready?

A. Yes sir.

Q. And sometimes he gives it two punches and sometimes more?

A. Well, I never noticed about the number over two; I have seen them as many as two.

Q. Do you patronize Mr. Gooding's fountain?

A. Yes sir.

Q. And there is the place where you have made the observations, what observations you have made?

A. Yes sir.
Q. In a general way?
A. Yes sir.
Q. What is your weight, Mr. Branner?
A. I weigh about two hundred and fifteen pounds.
Q. You have enjoyed very good health for the last few years, have you?
A. Yes sir.
Q. And have frequently been up late at night?
A. I have been up late at night, yes sir.
Q. What is your height, Mr. Branner?
A. I am five feet, ten inches.

D. M. CHAMBLISS,
the next witness called on behalf of the claimant, of lawful age, first duly sworn, deposed:

DIRECT EXAMINATION:
BY MR. McALLISTER:

Q. What business are you in, Mr. Chambliss?
A. Retail drug business.
Q. And where?
A. 301 Gay Street and 310 Clinch Avenue.
Q. In Knoxville?
A. Yes, sir.
Q. How many stores do you run?
A. Two stores.
Q. You run two stores?
A. Yes, sir.
Q. How long have you been in the retail drug business, Mr. Chambliss?
A. About eighteen years.
Q. State whether or not in connection and as incident to your drug business you operate a soda fountain?
A. Yes, we do.
Q. At both places?
A. Yes, sir.
Q. State whether or not you exercise general supervision over these fountains?
A. I do.
Q. Are you not familiar with the general condition of the soda fountain trade and business?
A. I am.
Q. How long have you been so familiar, Mr. Chambliss?
A. Twelve to fifteen years.
Q. What are some of the principal drinks that you dispense at your soda fountain, Mr. Chambliss?
A. Phosphates and Coca-Cola, ice cream sodas and nut

sundaes and things of that kind.

Q. How is the drink called Coca-Cola ordinarily dispensed at the fountain, how is it ordinarily served to the customer or consumer?

A. One ounce of syrup to about six or seven ounces of carbonated water.

Q. Where and by whom is the syrup from which Coca-Cola, The drink called "Coca-Cola" is made, where and by whom is it made?

A. The Coca-Cola Company; we buy ours from Atlanta; I think there are other branches that it is shipped from.

Q. How long have you been familiar with the drink known as Coca-Cola?

A. I should say twelve to fifteen years.

Q. State whether or not, Mr. Chambliss, during that time there has been, within your knowledge, any other drink, beverage or food product on the market known as Coca-Cola except the drink made by the Coca-Cola Company, of Atlanta, Georgia?

A. That is the only one under that name; there are a good many others imitating it under similar names.

Q. The only one by the name of Coca-Cola?

A. Yes, sir, that I know of.

Q. To what extent has the drink, Coca-Cola, been advertised during the period of your acquaintance with it?

A. Very extensively and in various forms in the past ten years I would say.

Q. Have you ever known of any other drink being advertised as Coca-Cola by any other manufacturer than the Coca-Cola Company, of Atlanta, Georgia?

A. I have not.

Q. About how many glasses of Coca-Cola on an average a day will the average man who drinks Coca-Cola at all drink?

A. From one to three, I would say.

Q. Mr. Chambliss, state whether or not the condition of the weather has any effect on your sales of Coca-Cola?

A. It does in a way, of course; of course the soda fountain business is a great deal better on a bright warm day than on a cold or rainy day.

Q. How much will it fluctuate that way between a pleasant warm day and a cold unpleasant day?

A. Twenty to thirty three and a third per cent.

Q. Mr. Chambliss, to what extent do children call for Coca-Cola at soda fountains?

A. A very small per cent; I have very few calls from children for it.

Q. State whether or not, Mr. Chambliss, in your experience in the soda fountain business you have known of persons being injuriously effected from drinking Coca-Cola?

A. I have never known of one.

Q. Please state what your observation is as to whether or not drinking Coca-Cola creates in the person who drinks it a craving or a desire for increased quantities and increased number of drinks?

A. I don't think it does; and personally my experience has been that it does not; I tried it personally—I drank it myself, and I have no desire to increase it.

Q. How long have you been accustomed to drinking it or have you been drinking it?

A. From five to six years.

Q. About how many a day do you drink yourself?

A. Not over two.

Q. Do you or not ever go without drinking it during the day at all?

A. Yes, frequently.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Who is the jobber here in Knoxville that handles and dispenses Coca-Cola and sells it?

A. The Chapman Drug Company and Littlefield-Steere Company both have the account, I think.

Q. Both have which?

A. Both have the account, they both job it.

Q. Do you procure your syrup through them?

A. No, sir, we buy direct from Atlanta.

Q. Are you a pharmacist?

A. Yes, sir.

Q. Are you a practicing physician?

A. No, sir.

Q. And are not licensed as a physician?

A. Not as a physician, no.

Q. Where is your place of business in Knoxville, Mr. Chambliss?

A. 301 Gay Street and 310 Clinch Avenue.

Q. Where is your position in your place of business and where do you customarily stay?

A. 301 Gay Street.

Q. Now, what is your position in the room or store?

A. How was that?

Q. What is your position or location in the room when you are in your place of business, at your accustomed place of business, where is that position?

A. I am all over the store, and a part of the time in the

office which is on a balcony in the rear of the store.

Q. How many serving boys or mixers do you have at the fountain at your Gay Street place of business?

A. Four during the summer season and three in the winter.

Q. How many clerks do you employ aside from those three boys, or rather how many persons are there in your place of business aside from those three or four boys at the fountain?

A. About eighteen in the main store at 301 Gay Street.

Q. And you have general supervision over them all?

A. Yes, sir.

Q. And as a consequence you don't spend a great deal of time at the fountain?

A. I have not in the last year or so.

Q. You are not accustomed to serving at the fountain yourself?

A. No, sir, not in the last year.

Q. Have you ever been accustomed to serving at the fountain?

A. In the beginning, ten or twelve years ago, frequently.

Q. When a customer comes in and calls for "dope" at the fountain he gets Coca-Cola?

A. That is a slang phrase that has been used lately in calling for Coca-Cola, it is true.

Q. And that has come to be a very frequent name for it, has it not?

A. I have heard it frequently.

Q. And your boys at the fountain understand what to serve when a customer comes in and calls for dope?

A. Yes, I presume they do.

Q. What is the pharmaceutical profession generally termed "dope", that is whatever character of drug or concoction?

A. It has been applied to morphine, hyoscine, cocaine and similar injurious things.

Q. You are a registered pharmacist, are you?

A. Yes, sir.

Q. Of course you and other persons who sell Coca-Cola sell it for a profit?

A. Yes.

Q. Now, you say the average man consumes from one to three glasses per day?

A. Yes, sir.

Q. At your store?

A. No, sir.

Q. Now, what would be the largest, some of them don't

buy them, what is probably the highest number so as to get this average from one to three.

A. Why, I don't know of anyone at our place using over four glasses a day.

Q. You don't pay any particular attention, however, to how much they use?

A. Just see them in the store and drinking at the fountain.

Q. And you have seen them in there so regurlarly that you have observed that some of them are in there as many as four times per day?

A. Yes, I think that is correct.

Q. You don't know, of course, how many glasses they take while they are there?

A. I have never seen anyone drink more than one at a time when he came to the fountain.

Q. But you have not specifically observed to ascertain as to that, Mr. Chambliss?

A. I have not investigated it, no.

Q. You say you have not investigated it?

A. No sir.

Q. What method or system is there for graduating or measuring the amount of Coca-Cola that is served at one time to one person?

A. Well, some of the dispensing jars are gauged with a pump that is set with a side screw, that is the counter service, where you can measure it accurately; in the wall system there is no way except judging on the glass when you have a certain amount in the glass.

Q. What do you mean by the "wall system"?

A. The old style fountain with syrup in the back instead of in the counter.

Q. By "in the counter" you mean below where the customer cannot see what is going on?

A. No, the pumps are on a level with the serving counter; what is known as the counter service or pump system.

Q. And that is where the Coca-Cola syrup is, under the counter?

A. It is in a jar under the counter, but the pump is on a level with the counter, and where it is dispensed from is in sight.

Q. Yes.

A. And the old style fountain is where the fountain faced the cutomer, and the pump or push thumb plate that the server touches in order to release the Coca-Cola and let it pass in to the glass is connected with that fountain which faces the customer.

Q. Yes. And there is no accurate method of measuring

but the boy who is dispensing it simply guesses at the amount that he puts in?

A. That is correct; it is gauged by the size of the glass, the glass they use, they use from a seven to an eight ounce glass, and the idea is to put one-eighth in it, if eight ounce, one-eighth Coca-Cola and seven-eighths carbonated water.

Q. And if it is a seven ounce glass?

A. We don't use a seven ounce glass, I don't know how he dispenses it then, but I presume give one ounce of Coca-Cola to six ounces of carbonated water.

Q. There is no graduate on the glass?

A. No, sir, not on the glass that we use.

Q. Now, the majority of the fountains in this city and other cities are what you call or term the old style of fountain?

A. No, sir, the majority are the counter system, the new style and have been for the last two or three years.

Q. Take the one that is right opposite the Imperial Hotel, do you call that an old style or what?

A. That is the new style service.

Q. But they are both employed in this and other cities as far as you have observed?

A. Yes, sir.

Q. Now, if you have what is known as the counter system where it is regulated by the thumb screw, you say?

A. Yes, a set screw.

Q. The boy pushes it one time and that is supposed to emit how much in the glass?

A. One ounce; it can be set for any amount, but we set ours for Coca-Cola for one ounce.

Q. Now, as that wears does it increase or dimish the amount that is emited?

A. Well, there is no wear to it—the pump, that is, the dispensing part, I would not think it would wear either in an old one or a new one.

Q. But you are bound to have some wear on it?

A. Yes, but I don't think it would effect the quantity discharged. On some of the pumps they are controlled by springs, and others have the gravity system; of course the spring would become worn in time, but the gravity system would not wear at all.

Q. Now, the spring system, when it does become weakened, does that increase the quantity of Coca-Cola emitted?

A. Yes, I think it would increase it; we don't use the spring system, and I am not familiar with that.

Q. But the counter system that you spoke of consists of both the gravity and the spring systems?

A. Yes, sir.

Q. Now, when a customer calls for a double header of Coca-Cola, what do you understand is meant by that?

A. I never heard that term used in calling for it.

Q. If he calls for it "extra strong" what would you understand to be meant by that?

A. To give him a little more I would think.

Q. You have heard that used have, you?

A. Yes, sir, occasionally.

Q. That means that he wants more?

A. Yes, I would understand it so.

Q. Now, in order to give you more don't he have to touch that spring more than once?

A. Yes, sir, you do.

Q. And you do that in that kind of a case, don't you?

A. Yes, that is done, that is the only way to get it twice, is to push the lever twice, but they do not push it all the way down usually, they would not get a double dose, only get a portion more, depending upon the strength of the stroke.

Q. But when a customer comes in and calls for it "extra strong" or for an increased supply, why you have got to press this spring more than once in order to get the extra amount?

A. Yes, that is correct.

Q. Now, what is the occasion, as you understand it, for the customer calling for it in that way?

A. Well, nothing but a notion; it certainly does not make the drink any better; he does not get any better effect from it, they just imagine they do.

Q. You think it is purely an imaginary effect that it has on the customer?

A. Yes, I do.

Q. Now, what do you say is the effect of caffeine on the human system?

A. Caffeine is a stimulant.

Q. Do you know whether or not there is any caffeine in Coca-Cola?

A. I do not.

Q. If there is any caffeine in Coca-Cola and you give caffeine as a stimulant, then of course the customers system is stimulated?

A. Yes.

Q. And isn't it stimulated in proportion to the quantity of caffeine that is in it?

A. Yes, sir, I would think so if it had caffeine in it.

Q. To what class of persons are your principal sales made?

A. Business people.

Q. And that consists of whom?

A. Clerks, salesmen, travelling and city salesmen and office people.

Q. And does it consist very largely also of girls in department stores?

A. The percentage of our business among girls for Coca-Cola is very small.

Q. It is sold to them, however?

A. Yes, sir, it is.

Q. Now, in speaking of children, what age persons do you refer to?

A. From twelve to sixteen years.

Q. What do you call persons from five years up to twelve years?

A. Very small children.

Q. Now, of course, at your fountain anybody who comes in with the required price can get a glass of Coca-Cola?

A. Yes, sir, he can.

Q. And if he comes in one or a dozen times a day he can get one or a dozen glasses provided he has the price?

A. He is welcome if he has the price.

Q. What amount of Coca-Cola do you say that you consume on an average during the day?

A. I do not know that I could give the amount per day —I know what our contract is, what we consume in a year—

Q. (Interupting) I am talking about you personally.

A. Oh, I misunderstood you; for the present not the same thing; I have drank from one to two glasses a day.

Q. What amount are you consuming now?

A. I thought I would stop it; I have heard many people say in drinking Coca-Cola you can't stop it and I have stopped it frequently; I thought I would try it.

Q. And you thought you would stop it, or at any rate you shut it off?

A. That I would see if I had any desire for it; I had no injurious effect from it.

Q. That you observed?

A. No, sir.

RE EXAMINATION
BY MR. McALLISTER:

Q. Now, I will ask you whether, as a matter of fact people do come in and call for a double portion of syrup, in their drink of Coca-Cola I mean.

A. I don't believe I have ever heard it called for in double quantity; I have heard it asked for "make it

stronger" but I never heard it called for "double header" or double quantity that I remember.

RE CROSS-EXAMINATION,
BY MR. MILLER:

Q. Have you frequently heard it called for as "dope" and have you also heard them ask to have it made stronger?

A. I have.

MR. CANDLER: I will now read the following depositions:

J. P. REGAN,

the first witness called, of lawful age, duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. McALLISTER:

Q. Where do you live, Mr. Regan?

A. Nashville, Tennessee.

Q. What is your business?

A. Manufacturer of tobacco.

Q. Are you not accustomed occasionally to drink soft drinks?

A. I am.

Q. Now give some of the principal soft drinks that you take?

A. I drink Coca-Cola, milk chocolates, lemon phosphate and so on.

Q. How long have you been drinking Coca-Cola, Mr. Regan?

A. Off and on for seven or eight years.

Q. In what form do you drink it?

A. In the bottled form mostly.

Q. Do you know how the bottled drink is put up?

A. It is put up in bottles of carbonated water.

Q. In about what proportion if you know?

A. I don't know, sir.

Q. Where and by whom, if you know, is the syrup which enters into the drink made?

A. I understand it is made by the Coca-Cola Company of Atlanta, Georgia.

Q. How long have you known the drink, Mr. Regan?

A. I have known it for eight or ten years.

Q. State whether there has ever been within your knowledge any other drink, beverage or food product placed on the market under the name of Coca-Cola other than that made by the Coca-Cola Company, of Atlanta, Georgia?

A. None that I know of.

Q. About how many glasses or bottles of Coca-Cola a day do you drink?

A. Why, I will drink, I can't say, I will drink no specified amount a day, but I will drink one bottle one day and maybe go without it for a day or two and then drink two bottles some days.

Q. What has been your experience as to whether or not drinking Coca-Cola creates a desire for drinking increased quantities or an increased number of glasses or bottles of Coca-Cola?

A. I have not noticed that it has any hold on me in any way. I can quit it any time I want to, I am sure I can.

Q. What has been your observation, if you have observed, as to how many glasses or bottles of Coca-Cola the the average man drinks who drinks it at all, takes?

A. I could not say.

Q. You could not say?

A. I have never observed any one and never heard any one state they drink a specified amount.

Q. To what extent has Coca-Cola been advertised within your knowledge since you have known it?

A. I have noticed that it is advertised extensively, both locally in Nashville and in publications, magazines etc.

Q. State whether or not you know of any other drink than that manufactured by the Coca-Cola Company, of Atlanta, Georgia, being advertised to the public as Coca-Cola?

A. I do not.

Q. State whether or not, Mr. Regan, there has ever been a case within your knowledge of anybody being injuriously effected by drinking Coca-Cola?

A. I know of none.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. How old are you?

A. Thirty-three in November.

Q. You have made no special observation on the use or effects of Coca-Cola of course?

A. How was that?

Q. I say you have made no special observations as to the use and effects of Coca-Cola?

A. I have come in contact with people who have used Coca-Cola, but I have never observed any injurious effects from it.

Q. How do you know they use it?

A. I have seen them drink it.

Q. How often?

A. Well, it is according to the individual that I would

be speaking of. In a general way I have been with friends who drank a bottle or a glass or two of Coca-Cola, I believe in the evening. On other occasions I have been out and didn't drink any.

Q. You have come in contact with people who used it about like you do?

A. Yes, sir, in the same form.

Q. And to about the same extent?

A. Well I expect they do; I don't know what they do through the day.

Q. What has been your business for about the last seven or eight years?

A. Tobacco.

Q. Are you accustomed to patronizing soda fountains?

A. I patronize them to a certain extent, yes sir.

Q. What is generally served when "dope" is called for at the fountains?

A. Coca-Cola, that is a slang expression.

Q. How is Coca-Cola dispensed at the fountains when "dope" is called for, by means of a spring worked with the thumb of the server or dispenser?

A. I didn't catch your idea, Mr. Miller.

Q. How does the man serve it at the fountain when a customer goes in and calls for "dope", how does he serve it?

A. Different fountains have different ways of putting the syrup in the glass; some use the thumb press and some use the lever they pull down that throws the syrup into the glass.

Q. They have no means of measuring the amount that is put in the glass?

A. I have never noticed or paid any special attention that they had any gauge as to the amount they put in.

Q. There is no gauge on the glass?

A. I have not noticed any.

Q. Then it depends on the man that is serving it or operating the screw or faucet as to how much he puts in?

A. That is the case to the best of my knowledge.

RE-EXAMINATION,
BY MR. McALLISTER:

Q. You stated, Mr. Regan that where people called for "dope" to be served it was understood to be Coca-Cola they wanted. State whether or not you have ever seen Coca-Cola advertised as "dope"?

A. I have not.

Q. Now, I believe that you stated that "dope" was merely a slang expression for Coca-Cola?

A. Yes, sir.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. You don't know how that is, you don't know what is in Coca-Cola?

A. I do not, but from the questions you have asked me that if I went up to the fountain and asked for "dope" that is usually meant as a slang expression that I want Coca-Cola.

Q. You don't mean to swear whether it means simply a slang expression, or whether it really is dope?

A. Well, I can only speak from individual experience or from people I have associated with. I know that is the intention that they intend to convey to the server when they call for "dope"; it is a slang expression for Coca-Cola.

Q. And when "dope" is called for Coca-Cola is given?

A. Yes, sir, that is what the customer wants.

Q. Is it generally called for under that name by the young man that drinks it?

A. To a certain extent it is, yes, sir; possibly an easier way to say Coca-Cola, it has been used to a certain extent.

Q. And do they sometimes call for it as "coke"?

A. They do for the same purpose, with the same idea.

Q. Have you no connection with the local bottling works?

A. I have not sir.

Q. And "coke" is sort of an abbreviated name for cocaine, is it not.

A. I couldn't say that it was; I have heard it used "coke" as pertaining to the drink of coca cola, but I don't know any cocaine users or takers of cocaine and never heard it called for under that name.

E. J. SCHOTT,
the next witness called, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. McALLISTER:

Q. You have been sworn, I believe, doctor?

A. Yes, sir.

Q. Where do you live, doctor?

A. 602 Fatherland.

Q. In what city, I mean?

A. Nashville.

Q. What business are you in?

A. The drug business.

Q. Wholesale or retail?

A. Retail.
Q. Do you operate more than one store?
A. Two.
Q. How long have you been in the drug business, doctor?
A. Since 1894.
Q. State whether or not you operate a soda fountain incident to your drug business?
A. Yes, sir; in each store.
Q. At both of your places?
A. Yes, sir.
Q. Now please name some of the principal drinks you serve at your soda fountain, doctor?
A. Well, I serve all of the soft drinks, such as the phosphates and lemonade, coca cola, pepsol and digestol.
Q. I just wanted you to name some of them.
A. Yes, sir, that is some of them.
Q. I will get you to state how the drink known as coca cola is ordinarily served at your fountain?
A. How was that?
Q. I say, how is coca cola served at your fountains to consumers generally?
A. It is served in eight-ounce glass, one ounce of coca cola syrup and seven ounces of carbonated water.
Q. And where and by whom is the syrup that enters into the drink, coca cola, made?
A. By the Coca-Cola Manufacturing Company, in Atlanta, Georgia, I think.
Q. How long has coca cola been on the market, doctor, so far as you know?
A. Well, to my certain knowledge, I believe I have known of it for fifteen years.
Q. State whether or not there has ever been within your knowledge any drink, beverage or food product placed on the market under the name of "Coca Cola" other than that manufactured by the Coca-Cola Company, of Atlanta, Georgia?
A. Well, there have been imitations of coca cola; I have never used anything but the coca cola that I bought from Atlanta, Georgia.
Q. What I mean or what I am trying to get at is this: has any other drink been placed on the market as and under the name of coca cola?
A. Oh no.
Q. Other than that manufactured by the Coca Cola Company, of Atlanta, Georgia?
A. No sir.
Q. To what extent has the drink known as coca cola

been advertised during that time, doctor?

A. You mean in the ways of advertising?

Q. To what extent, is what I mean?

A. Extensively; it is known all over the United States from what I can learn in my travels. I have bought it in most every city I have traveled in.

Q. Has it been advertised very extensively?

A. Yes, very extensively; I don't know of any other drink that has been advertised more extensively.

Q. To what extent, doctor, do children call for coca cola or are they accustomed to call for coca cola?

A. Why, a very small percentage, very seldom. In fact, I don't suppose that in my experience I couldn't hardly remember when I had sold a child a glass of coca cola; they don't like the taste of it.

Q. State whether coca cola is more popular or less popular with children than ice cream and ice drinks?

A. Well, sir, there could not be any comparison at all, I don't suppose. As I stated above, I don't know hardly when a child has called for it, in fact I don't remember a single child coming in for the purpose of calling for a glass of coca cola; it is generally suggested by the parent or something of that kind.

Q. Doctor, what has been your observation as to the number of drinks of coca cola that a man who drinks coca cola at all, drinks?

A. The average per day you mean?

Q. Yes.

A. Anywhere from two to three, something like that.

Q. Two or three?

A. Yes, sir.

Q. Doctor, what has been your observation as to whether or not the drink coca cola creates in the person who drinks it a craving or desire for increased quantities of coca cola, or for an increased number of drinks a day?

A. Now, do you mean, does a man come in and call for his coca cola, do you mean how often he drinks it?

Q. No, what I am trying to get at is this: whether or not the drinking of it creates a craving for larger quantities of it?

A. No, that has not been my experience.

Q. Do you drink coca cola yourself?

A. Why, occasionally, yes. I suppose I drink possibly three or four glasses a month, something like that; I don't care anything about it.

Q. Three or four glasses a month?

A. Yes, sir, I don't care but very little about it.

Q. Has it or not been your experience in regard to your-

self that the drinking of coca cola creates a craving for more coca cola?

A. No.

Q. State whether or not, doctor, there has ever been a case within your knowledge of a person being injuriously affected by coca cola?

A. Not in my observation, no, sir.

Q. How many gallons of coca cola syrup a year do you handle?

A. I think last year I handled something near a thousand or twelve hundred gallons; this year will handle more than that.

Q. Where are your stores located in Nashville, doctor?

A. Eighth and Broadway and Fourteenth and Woodland.

CROSS EXAMINATION,
BY MR. MILLER:

Q. Are you acquainted with Mr. Kenny, the gentleman who came here with you, to this building with you this morning?

A. Yes, sir, that is I have met him; I have known him by reputation as being the bottler here, but I just met him personally about six months ago.

Q. And by a bottler you mean a man who is the head of the local bottling company that bottles coca cola for sale?

A. Yes, sir.

Q. And was he the one who arranged with you to come here this morning to testify?

A. Yes sir.

Q. Are you a practitioner of medicine?

A. No sir.

Q. Then you are called "doctor" merely because you are a pharmacist?

A. Yes, just as a pharmacist.

Q. Now, in your business house where is your station — where do you stay?

A. I am proprietor.

Q. What I mean is, do you serve at the fountain, or stay behind the prescription case?

A. Well, I work at different parts of the store; of course I have the regular soda water boys, and at the same time I usually try to stay up on the front part of my store to look after and wait on the trade, and generally in front of the fountain at the cigar stand; the fountain is opposite the cigar stand.

Q. How many pharmacists do you employ in your two stores?

A. Three.
Q. Two in one and one at the other?
A. Yes; one of my men is kind of relief man.
Q. And yourself?
A. Yes sir.
Q. And alternates with you?
A. Yes sir.
Q. And you have two at the other place?
A. Yes sir.
Q. Now, about your fountain boys, how many serve at the fountain?
A. I have two boys on different watches, one, for instance comes on at six o'clock in the morning and stays until twelve, and he is off that evening and comes back at night; then the other boy relieves him during his absence; in other words, they are on twelve hour shifts, but there is six hours in between —
Q. Is that so at each store?
A. No sir, at my other store the business is limited and my prescription clerk kind of looks after that business, the business is very small at the soda fountain.
Q. One of your places is near the custom house here?
A. Yes, right across the lot.
Q. Were there two boys serving there about an hour ago?
A. Yes, but one of them will be off at twelve o'clock and the other one, he watches until six o'clock, and then the other one comes back and he is off, they alternate and put in twelve hours shifts.
Q. Then how did it happen that there were two serving there about 10:30 o'clock today at the fountain?
A. I don't suppose you understand the watches. You see they come on at six o'clock in the morning, both of them, there, one to do the making up of the syrups, and the other one stays at the fountain. Of course he might while he was up there and the other one is busy, the other one might jump in and assist him for a few minutes; whenever they are two there one's position is to mix up the syrup and get things in readiness so that when this boy goes off watch and when he is left alone he can stay behind the counter.
Q. How long does it require them to do this mixing, doctor?
A. How was that?
Q. How long does it require this mixer to perform his duties?
A. In the morning from two to three hours; long enough to get the syrups mixed up.
Q. What is to do in mixing the coca cola syrup?

A. Well, he has other duties, for instance, we make our lemon — we buy our lemons and grate the lemon peel off, and then mix them with syrup so as to make the syrup direct from the lemon, and that takes a little time, and the same way with the oranges, and when we come to the chocolate, it is the same way; we have to make our chocolate, to make up our chocolate syrup, but cherry and strawberry I buy the Hengerford-Smith goods, but I dilute those with the syrup that we keep made up.

Q. What do you do in the case of the coca cola syrup?

A. We serve that right from the barrel; that is, we draw it out of the barrel and put it into the eathen jars, in the fountain, into the porcelain jars.

Q. What kind of fountain do you use?

A. The manufacturer you mean ——

Q. I mean what is the arrangement whereby you emit syrup from the fountain into the glass?

A. Why, it is done with a spring pump, no not exactly a spring pump, but is a suction pump.

Q. Is it a pump that works by pressure with the thumb?

A. Yes sir, you press down on the lever and it throws out one ounce of syrup, it is regulated so as to throw that much by turning a little screw, you regulate that to one ounce, and then that is filled up with carbonated water in the glasses, and I presume there are about eight ounces in the glasses, eight-ounce glass.

Q. Does one pressure of the thumb cause an ounce to flow in to the glass?

A. Yes, sir.

Q. Now, in serving this morning about 10:30 it was noticeable that one of the boys punched twice ——

A. (Interrupting.) That is against the rule.

Q. Now if he touched it twice in order to prepare a glass of coca cola, how much would flow if he would give two punches with the thumb?

A. You mean all the way down?

Q. I do not pretend to say, I am just asking you; if he punched it twice with his thumb how much would come out?

A. The pump, it is a suction pump, made on the suction principle, and as he presses it — the pump sets that way and when he presses it, it goes down — there is a little screw on it, and it is set for one ounce, and if you let it come all the way up, the syrup being heavy, the pump won't release, and in some cases I have cautioned him to take his hand and push it up, and in some cases if you let it alone and give it time it will go up in a second or two; but the boys do often get negligent and don't keep the sugar away

from the pump, and the pump don't work well, and I take the pump out and wash it thoroughly and put a little glycerine on it and it works nicely, but they will get in the habit of touching it and a spoonful will run out, but one charge of that syrup is one ounce.

Q. Now, but if they, for some reason, make two punches, as you express it, and punch it twice, what is your explanation of the reason why they punch it twice?

A. Well, that is just disobedience and contrary to my method of doing business; they have got strict orders just to punch that pump once to obtain one ounce of coca cola syrup and seven ounces of water, that is my rule.

Q. But you say that the pump hangs in some way so that a full ounce is not discharged sometimes?

A. Well, that is in a case where the boy does not attend to it like he should, and the sugar possibly gets around the working of the pump and around the piston.

Q. And then what method does he adopt in order to get one ounce out?

A. Well, that pump should be taken out and scalded good and a few drops of glycerine put on it.

Q. But the boy does not take time to do all that while the customer is waiting, what does he do to give the customer his quota of coca cola?

A. I guess in those cases he would punch it the second time and if he finds that he gets too much syrup he puts it back into the container; in other words, my orders are one ounce of the syrup; if the boy puts in any more then he does it absolutely against my will. I try to be there and watch those things, and whenever I catch anything of that kind I remedy it.

Q. But you don't ascertain whether the pump is hung until it actually hangs?

A. No, it may go a week or two and the sugar will not crystalize and hang it, and then it might — it depends a good deal on the weather as to that; I don't know, possibly it is the constituency of the syrup that may have something to do with it.

Q. It is made out of a hard rubber?

A. The pump is, yes sir.

Q. Then there is a sugary substance, I mean there is sugar compound in this syrup and that causes it to clog the pump whereby it actually hangs in the fountain?

A. Yes, sir, in my fountain.

Q. And is that true in the ordinary fountain?

A. Yes, I should think so, with the little cogs, because I had the same trouble when I had a wall fountain. Mine is what is called a "Constellation" it is service in front of

the customer — counter service.

Q. And yours is known as the counter service?

A. Yes sir.

Q. Or counter fountain?

A. Yes sir.

Q. And they have both the counter service and the wall fountain in use in this section of the country?

A. Yes sir.

Q. And they are the two kinds of fountains that are in constant use in this section?

A. Yes sir.

Q. And that same condition would obtain in the other, that is, that the pump or the spring would become coated with sugar and hang and the boy would be required to give it two punches in order to give requisite amount of the coca cola syrup?

A. Yes, sir, that would be, from my observation true.

Q. There is no graduate on the glasses that are used for serving coca cola?

A. Why yes, I had some — the coca cola people got out a glass specifically for that purpose, and labeled on the glass "Coca Cola" and there was a little etched scale on that glass, showing the amount of coca cola requisite to make a drink.

Q. But you don't use that kind?

A. I have been out of them as a rule; I may have some of those on hand.

Q. You generally have some others on hand that have not the graduate on them?

A. Yes, sir, I have some of those because I serve other drinks besides coca cola, and they are rather hard to obtain from the dealer because as a rule these eight ounce glasses come ungraduated.

Q. And as a rule the ungraduated glass is used in dispensing coca cola the same as other drinks?

A. Ungraduated?

Q. Yes.

A. We don't use the graduate glass only for coca cola.

Q. But as a rule the graduated glass is not used for serving coca cola?

A. As a rule that has been my rule until I got out of them and could not obtain them from the jobber; they didn't have any of them.

Q. You are not using them now?

A. No sir.

Q. You are serving in a glass that is not graduated?

A. Yes sir.

Q. And it is left to the discretion of the boy as to how

much syrup he puts in?

A. Well, no sir, it is not left to his discretion; he is given orders to use one ounce, and is properly set for one ounce, and of course in a case where that pump might give him a little trouble it might be necessary to fix the pump, I have noticed in that case once or twice myself where he pumped it a second time, and I gave him instructions — I have pulled it off and got the pump out of there and cleaned it, and I have told him that whenever you catch that pump catching that you pull that tap off and pour it out and clean it off—I have had specific instructions from the coca cola people that to make coca cola properly that one ounce of the syrup with seven ounces of water is all that is necessary.

Q. Now, using the ungraduated glass how is the boy going to tell when he has an ounce of coca cola?

A. Well, from experience.

Q. Then he has to guess at what is an eighth of a glass full?

A. Well, yes; all the pumps are worked pretty much the same and experience will almost tell him just about the distance on the glass that one ounce would be. It is not a poison that would make it necessary to have it so specifically — the reason I bought the coca cola company glasses was from an economic standpoint ——

Q. You sell coca cola to anybody that calls for it, of course?

A. Yes sir.

Q. Whether it be the child or aged person or the nervous person, whomsoever it may be, you sell to the person that calls for it and has the price?

A. Yes sir.

Q. And if a person calls for dope why you understand that means coca cola?

A. Yes, it is a slang word for it.

Q. Do you buy direct from the Coca Cola Company at Atlanta, Georgia?

A. I signed a contract with the Coca Cola people to furnish me through the jobbers, Spurlock, Neal & Company.

Q. Did you ever own any stock in the Coca Cola Company?

A. No sir.

Q. You never have owned any?

A. No sir.

Q. And have never owned any in the local bottling plant?

A. No sir.

Q. Now, you say that coca cola is unpalatable to children, that children don't like it, that is what I understood you to say?

A. Yes, sir, I have had them to taste it, possibly a sup of it and set it aside and I would say don't you like that and they would say no — it tastes ——

Q. (Interrupting.) If it is not palatable, and you have only one ounce served in a drink, how do you explain the fact that you sell from twelve hundred to fifteen hundred gallons a year of the syrup?

A. Simply because the demand for it is so much greater above every article that I sell at the soda fountain, I presume I will sell, in other words, a hundred glasses of coca cola to one of any other drink at the fountain, that is the percentage.

Q. Now, I ask you from your experience as a pharmacist how you explain that fact on the assumption that, as you say, it is unpalatable, why is it that drink predominates to such a great extent over all others, it being an unpalatable drink?

A. Well, I will explain that from the standpoint of a pharmacist that the flavor — it has a specific flavor — I know that from my own experience—I will drink a glass of coca cola — as I stated a while ago, three or four a month, and then I will go for a month and not touch it at all because I do not specially like that flavor; it is a flavor that I have kind of a disgust for.

Q. And you say that it has a flavor that children don't like?

A. No, they don't like the flavor of it.

Q. And you don't like it?

A. No sir.

Q. Then why, I ask you is, it if you don't like it that it predominates to such a great extent as against all other drinks? How can you explain that?

A. Well, I will explain that simply from the judicious advertising, the name "Coca Cola" is just simply burned into the minds of the people; I have had people to walk up to the fountain, possibly four or five walk into my store and step up to the fountain, and one gentleman will say I believe I will take a lemon phosphate and other fellow say give me "coke" and another fellow say I will take the same thing. The name, from what I can observe in my experience, is catchy and the advertisement has been so extensive that two thirds of the people you will find don't know hardly of any other drink to amount to anything; it is simply burned into the minds of the people.

Q. Now, you say they will walk up and call for "coke"

is it advertised as "coke?"

A. No sir; that is just a slang expression or phrase; they call it a "coke," "dope" and "coca cola."

Q. "Coke" is an abbreviation for cocaine, is it not?

A. I don't know what "coke" is. I think that is just kind of a slang phrase, I don't know; the first time I ever had it called for that way I said "What do you want, my friend?" and he said "I want that drink at the fountain that I believe the right name is Coca Cola." And after that I knew that a man wanted coca cola when he called for "coke."

Q. Don't you know that "coke" is an abbreviation for cocaine, and is referred to by people who use cocaine and dispense cocaine, I mean is used by people who use cocaine and dispense cocaine, as an abbreviated name for cocaine?

A. I have often heard that associated with it.

Q. You have also heard the term "dope" used, applying to drugs, such as morphine, and other deleterious drugs, have you not?

A. Yes; yes it is generally applied to a narcotic but knowing the customers, or the ladies or gentlemen that walk into my store — those who have the appearance of ladies and gentlemen, I know when they call for "coke" or "dope" that they do not wish any specific chemical — they apply that to that drunk — I mean that drink.

Q. That they do not desire anything stronger than coca cola?

A. No sir.

Q. Then your explanation of the reason why you sell one hundred drinks of coca cola to one of the other drinks dispensed at your fountain, or fountains, is that although coca cola is not palatable, and you do not like it, and children do like it, that nevertheless you do sell it in that great disproportion because it is advertised?

A. Yes, the advertising that has been so extensive in my opinion as to burn that name right into the minds of the people?

Q. And causes them to take that which is unpalatable to you and to other people?

A. Yes sir, as far as I have observed it.

Q. What is known as the "coca cola habit" or the "coca cola fiend" — you hear that spoken of — what do you mean by that?

A. Well, I presume a gentleman who would come in of a morning and get his coca cola and possibly come back at noon and get his coca cola, and possibly get in the habit of coming into a store and calling for it, why he would become a fiend to that specific drink like a man that would

come in for a cup of hot coffee in the morning and come back for his coffee at noon time, and so on, as you might say about any specific drink that is bought at the fountain; it is kind of a natural thing now for a person to be called a fiend that takes hold of any specific thing and sticks to it or has a tendency to like it.

Q. Well, you know as a matter of fact that such is the case with reference to coca cola because you do hear them call for them "coca-cola fiends?"

A. Yes sir, I have heard them called that.

Q. And you know from your own observation in your stores that the people who do come in and go out perodically and call for it are the same persons?

A. Yes sir, some.

Q. Now, you say in your examination in chief that the average man will take two or three drinks of coca cola per day?

A. Yes, sir.

Q. Of course some of that class don't take any, that is some of the class of people in your store, come into your store as customers, do not take any coca cola at all?

A. No, certainly not.

Q. Now, if the average man takes two or three drinks a day what does the extremist take per day?

A. In my observation I don't think I have a man that drinks over possibly — from my experience — that these railroad clerks down here come in of a morning and at noon and possibly when they got off of an evening, three drinks a day.

Q. Now, if they are the average what would be above the average?

A. I don't know; I have never had anybody to be so fiendish as to drink more than that, that has been my experience.

Q. You would class anybody as a fiend who took more than three drinks of coca cola a day, class them as coca cola fiends?

A. Yes, sir; a man who drank coffee three times a day, I would say he was a coffee fiend.

Q. Now, by reference to railroad clerks, you mean men who work where?

A. In the clerical department.

Q. How many of those are there?

A. I don't know exactly; I presume we have about fifteen or twenty.

Q. Who work near your place of business?

A. Yes, sir, at the N. C. & St. L. Railway offices. We have several school teachers — a good many professors at

the different colleges; and we have some people from here at the post office who come in and call for coca cola.

Q. Now, who are the professors that take three glasses of coca cola per day?

A. Now, that is a rather embarrassing question — do you mean to give the names of the people?

Q. Yes, that is what I mean. Now, why is it embarrassing?

A. I would not like to speak of a man's private business; I have an article for sale that is not against the law, and he buys it, just the same as somebody who comes in and asks for a fountain syringe, and I don't feel like telling the name but nothing wrong about it. If you ask me that direct question I will give you an answer.

Q. I have asked you that question.

A. Well, Prof. Jones over here at the High School is one man, and of course there are several teachers over there, I don't really know their names; I know them by sight.

Q. Male or female?

A. Female.

Q. What are your hours at your store doctor?

A. I am over there more or less all the time from six o'clock to twelve o'clock; I remain over there of a night until twelve o'clock. The next day I work until twelve o'clock and I go off in the afternoon. It depends on how business is and so on; I try to be there as much of my time as I possibly can; I don't have any specific time.

Q. You spend a part of your time in each of your stores?

A. Well, I don't spend very much of my time at the other place only when the man is sick — but, of course, it is necessary for me to take his place then but only in case of providential hindrance.

Q. You know of a product that is known as coca?

A. Do I know the product?

Q. Yes, you know what coca is?

A. You mean the cola nut? Coca?

Q. Yes, coca?

A. Well, you refer to powdered chocolate, we call that powdered coca.

Q. You are acquainted with the United States Pharmacopea?

A. Yes sir.

Q. You have that in your store?

A. Yes sir.

Q. Does that not give the name of a product which is called "coca?"

A. Yes sir.
Q. Do you know what that product is, do you handle it?
A. Yes, I guess I have got some of it.
Q. What does it consist of, what is it?
A. Well, it is powdered, in powdered form.
Q. What is its effect on the human system?
A. Stimulating.
Q. What is there in it?
A. Caffeine.
Q. Isn't it cocaine?
A. I don't know; I don't think it is.
Q. If you don't know what is in it why do you say.
A. Because that is one of the alkaloids that coca contains, and it contains cocaine too. I think in very small percentage, the most of these alkaloids are coca.
Q. Does not coca come from the coca leaf?
A. Yes, sir.
Q. It is made from that?
A. Yes, sir.
Q. Now, isn't the chief constituent of coca leaf cocaine?
A. Yes sir, cocaine, not caffeine, I think I was in error.
Q. Now, do you mean to say that caffeine comes from the coca leaf?
A. No — cocaine comes from the coca leaf.
Q. Then there is not any cocaine — I mean there in not any caffeine in the coca leaf?
A. No, no caffeine, I was wrong about that.
Q. Well now then, you also know a substance that is called cola, don't you.
A. Yes, sir.
Q. And what does that come from?
A. Cola nut.
Q. The cola nut.
A. Yes sir.
Q. Now, doctor, I show you a glass, I will ask you whether or not you recognize that as one of the ordinary glasses that is used at your fountain?
A. Yes sir.
Q. And you term that an eight ounce glass?
A. Yes sir.
Q. And by that you mean it would hold eight ounces of distilled water?
A. Yes sir.
Q. How many ounces of carbonated water will that hold?
A. Well, it will hold the same amount of carbonated water — although it sparkles so you may have a good deal

of it to jump out of the glass — possibly you will lose about two or three drams.

Q. Now, isn't it a fact that carbonated water has gas mixed in it?

A. Yes, that takes up some of the volume of the water.

Q. Is it true that instead of holding eight ounces of carbonated water that it would only hold a fraction over five ounces of carbonated water as it really comes from the fountain?

A. I had not thought about that.

Q. Now, since you have thought about it what do you say on that subject?

A. I don't know just exactly how much—you take 150 pounds of gas and put it in — I know I fill the tank we use in my East Nashville store — we use ten gallons of water and then we turn on a pressure of 150 pounds of gas ——

Q. How much does ten gallons of water weigh?

A. It is measured by vacuum.

Q. What does it weigh?

A. Well, a pint approximately weighs a pound — a dram of water would measure one cubic centimeter under the metric system; of course we generally look upon a pint of water as a pound in the general way of speaking; and that ten gollons of water added, has added 150 pounds of gas.

Q. And that makes the carbonated water you serve at the fountain?

A. Yes, sir.

Q. Now, I show you a graduate with Coca-Cola syrup in it, a syrup which I ask you to examine and state if it is not Coca-Cola syrup. I present it to you now?

A. (Looking at graduate.) I am not familiar enough with the taste, but from appearance of it I would judge that is coca cola, I would not swear it was

Q. Assuming that that was served to a customer within the last hour at your store, which is nearest to the post office when he called for a glass of coca-cola, that that was drawn out by the fountain server as sufficient to make a glass of coca cola, I will ask you whether or not that is in excess of the amount that is served on an average there to the customer?

A. Yes, that is in excess sure.

Q. You didn't know they were serving that much over at your store?

A. No sir.

Q. In one glass of coca cola?

A. No sir.

Mr. McAllister: I understand it is agreed that we re-

served all rights to accept as to competency or relevancy of the testimony until the hearing.

Mr. Miller: Yes.

BY MR. MILLER:

Q. How much is there in that graduate that I have shown you there of the coca cola syrup?

A. Two and a half ounces.

Q. Do you have customers who come in there and call for coca cola extra strong or double header or anything of that kind?

A. If they do they don't get it if I am around; it might be that my clerk would do a thing of that kind but he has absolutely got instructions not to do it.

Q. And why is that so?

A. Because, as I stated before, I buy that stuff upon the idea of making a profit out of it, and the coca cola people insist that one ounce should be given, and whenever their man comes through here taking orders with the jobber to stimulate the sale of it, he always specifies very particularly, or does to me, as to what should be put in ——

Q. (Interrupting.) If the customer would pay double price he could get a double quantity in one glass?

A. He would get two glasses.

Q. Well, he could get one glass of eight ounces if he wishes it by paying eight times the price, could he?

A. Yes sir; if a man would tell me he would pay a double price for the double quantity, but I never had a man to do that.

Q. You would sell it in any kind of quantity, in any quantity?

A. I presume I would; I never had an instance to happen like that.

Q. And you never instructed your clerk to sell as much as appears in this graduate to one person in one drink?

A. No sir, I did not; absolutely no; and if you will show me the man that is doing that in my place he will walk out of my door immediately.

RE-EXAMINATION,
BY MR. McALLISTER:

Q. Doctor, one or two questions I forgot to ask you; please state whether or not your sales of coca cola vary in the different seasons of the year, that is, as between the winter and summer?

A. Yes sir. We sell more in the summer time than we do in the winter time.

Q. Could you state about how much more you will sell

in the summer than you do in the winter, that is, how much it falls off in the winter?

A. Well, I will sell possibly three times as much in the summer as I will in the winter.

Q. State whether or not doctor weather conditions generally influence the demand for coca cola?

A. Yes sir.

Q. In what kind of weather is the demand for coca cola? greatest?

A. Hot weather on extremely hot days we will sell more coca cola than we do on cool days.

Q. Now, those pumps, doctor, that you use in drawing the syrup; how far do you have to push down the lever to get an ounce — is it necessary to push it all the way, or to push it only a part of the way?

A. To push it just one push.

Q. Entirely down?

A. Yes sir; that pump has got a little knob on the end of it that sets in that position (indicating) and the idea is to push it down until you get an ounce and then it works up again.

Q. State whether or not if the boy should punch it or push it only half way down he would get a full ounce?

A. No, he would get half an ounce half way down; that is sometimes the necessity for pushing it may be twice.

Q. Now, if the boy should push the lever half way down twice, how much would he get?

A. He should get an ounce — half way twice.

Q. Yes?

A. He ought to get one ounce.

Q. Doctor, are there any other drinks or substances generally that are not palatable to children that grown people find palatable?

A. Oh yes, Hires Root Beer is one.

Q. Hires' Root Beer is not palatable to children?

A. No sir, at least they never call for it.

Q. Now, doctor, as a man familiar with soda fountain business, and with the trade generally in coca cola and other soft drinks, I will ask you whether or not the average purchaser who calls for "dope" does it with the expectation of getting a narcotic or an opiate?

A. No sir, he does not.

Q. Now, I mean to say when a person calls for coca cola by the name of "dope," when he calls for "dope" meaning coca cola, does he expect to get either a narcotic or an opiate?

A. I don't know what his mind; from my own individual standpoint I don't think he does; he just calls for that

specific drink.

Q. State whether or not the manufacturers of this drink have ever advertised it as "dope?"

A. No sir.

Q. Or as "coke"?

A. No sir.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. You don't know what is in this coca cola syrup?

A. No sir. It has always been suggested caffeine, but whether that is in it or not I couldn't swear.

Q. You say that this graduate before you that purports to contain coca cola syrup and as having come from your fountain in this morning contains how many ounces?

A. Two and a half ounces.

Q. By weight, what is the size of that graduate?

A. Eight ounces, half a pound.

BENSON RIPPETOE,
the next witness called, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION,
BY MR. McALLISTER:

Q. What is your business, Dr. Rippetoe?

A. Pharmacist, — druggist rather.

Q. Retail druggist?

A. Yes sir.

Q. With what firm or business house are you connected?

A. DeMoville Drug Company.

Q. How long have you been in the retail drug business?

A. About twenty years.

Q. How long have you been in the business in Nashville, doctor?

A. Twelve years, I believe, sir.

Q. How long have you been with the DeMoville Drug Company?

A. I think I have been there about eleven; I believe I was out a little while, possibly a year.

Q. What is your connection with the DeMoville Drug Company?

A. Manager.

Q. State whether or not the DeMoville Drug Company with which you are connected operates a soda fountain?

A. They do.

Q. How long has it operated a soda fountain?

A. Before my time, I don't know about that.

Q. Every since you have been with it?

A. Yes sir.

Q. What are some of the principal drinks dispensed at the soda fountain of the DeMoville Drug Company?

A. Pepsol, coca cola, ice cream and all fruit syrups pretty well, all the popular fruit syrups, the usual line dispensed in soda fountains.

Q. How is the drink known as coca cola ordinarily served to the customer at the fountain?

A. We serve usually an eight ounce glass, that is our standard size and try to use the marked glasses that are graduated, I believe to one ounce.

Q. One ounce of what?

A. Of the syrup, the balance is water. That is our customary. Of course it varies some, between a half and a quarter of an ounce in a glass but eight ounces is what we are supposed to have.

Q. Now, where and by whom is the syrup which is the basis of this beverage manufactured?

A. In Atlanta, Georgia, that is the headquarters for it I believe.

Q. And by what company or what manufacturer?

A. The Coca Cola Company, as we understand it.

Q. How long have you been acquainted with the drink known as coca cola?

A. Well, I suppose about 15 or 16 years. Up to that time I was not in a store that had a soda fountain at all.

Q. Now, please state whether or not there has ever been within your knowledge any other drink, beverage or food product placed on the market under the name of "coca cola" other than that manufactured by the Coca Cola Company, of Atlanta, Georgia?

A. No, I don't know of anything else by that name sold on the market.

Q. To what extent has the drink known as coca cola been advertised?

A. Well, it has been advertised considerably more than any other, or probably more than all the others put together, as far as I know or would judge from appearances.

Q. And by whom has this advertising been done?

A. By the Coca Cola Company, I suppose.

Q. What is the nature of this advertising, doctor, what kind of advertising is it, how does it generally appear?

A. Well, it appears usually on the sides of houses, in other display matter and then it is advertised considerably by giving away complimentary tickets, you know, which are redeemed at the soda fountain.

Q. In the display advertising substantially what lan-

guage is used in the advertising?

A. Well, the ruling words are "Coca Cola."

Q. State whether or not there has ever been within your knowledge any other drink advertised as coca cola by any other manufacturer than the Coca Cola Company, of Atlanta, Georgia.

A. No sir, I do not know of any.

Q. Doctor, what is your observation as to the number of glasses of coca cola that the average man who drinks it at all will drink in the course of a day?

A. Well, that is mighty hard to state accurately. I suppose the average man will drink, oh, I should think from four to six glasses a day, depending largely on his inclination to take liquids. If I were drinking coca cola I would drink fifteen or twenty glasses a day; I drink that much water, and there are lots of people who only drink one or two glasses of water a day.

Q. What effect does weather conditions have on the demand for coca cola?

A. Well, it has a very decided effect; you take bad weather, or a real bad wet day and our trade will fall off probably to one-third, or I had better say will fall off two-thirds, and a good hot day come back to normal; while a clear cold day is not so detrimental as a wet warm day, strange to say.

Q. Detrimental to what?

A. To the soda trade.

Q. Please state whether or not the trade or business in coca cola fluctuates with the seasons?

A. Oh yes.

Q. To what extent and how?

A. Well sir, we have a great deal more business in the hot season than we do in the cold season.

Q. Now, approximately how much more in hot weather than in cold weather?

A. Well, I would put it at about twice as much in hot weather.

Q. Do you drink Coca-Cola yourself, Doctor?

A. No, sir, I do not.

Q. Have you ever drank it?

A. Oh yes.

Q. Well, to what extent did you drink it when you did?

A. Oh, occasionally, I am sir not a drinker of any kind of soda water; I drink pure water is all I ever drink sir.

Q. State whether or not it was your experience that drinking Coca-Cola created a craving or desire for drinking a larger number of glasses of Coca-Cola?

A. Why no, it never created a desire with me more

than just simply an inclination to quench my thirst. I remember an instance some time ago—I never go, of course behind the soda fountain to dispense anything, but I happened to know where the Coca-Cola syrup tank was and I use to go to that because it was the only one I could find conveniently, and I always got there more because it was convenient than because I liked it, more because it was more convenient than water.

Q. To what extent do children call for Coca-Cola at soda fountains with your observation?

A. Very very sparingly; very few children call for Coca-Cola.

Q. What is your observation as to the relative popularity among children who frequent soda fountains, Coca-Cola with ice cream and soda drinks?

A. Well, I should think it would be from ten to fifteen per cent.

Q. State whether or not, Doctor, there has ever been any case within your knowledge of any person being injuriously effected by drinking Coca- Cola?

A. I don't know of any.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Are you a practitioner of medicine?

A. No sir.

Q. You are not a licensed physician?

A. No sir.

Q. Where is your position in the store, is it behind the partition or near the fountain or where with reference to the fountain?

A. Well, my position in the store is that of manager and of course that puts me as much one place as another—you might say all over the store, while I am, of course,expected and might a great deal of our trade which of course is up in front part of the store near the fountain—as a matter of fact I try to watch over everybody, well everything that comes in and in all departments.

Q. Now, as to children do you mean to say you don't have a patronage from them?

A. Yes, a patronage from children.

Q. News boys and messenger boys?

A. Yes, sir, that is our principal children patronage more than prolific around our place there.

Q. Have you not observed that the news boys and messenger boys in the main do ask for Coca-Cola?

A. No sir, on the contrary to that in my judgement they eat mostly ice cream.

Q. I know, that is what they eat, but I am talking about what they use as a drink?

A. It is a question of spending a nickle with them; I don't know about the drink, they can drink water; they can get a glass of water on the side and get the drink and the ice cream and all for the same price. I think that the newsboy will take considerably more of the ice cream than he will of Coca-Cola; of course it is a matter of my judgment, but that would be the way I would judge it was, the way I would say.

Q. But have you made any special observations?

A. No sir, none whatever.

Q. Now, you know it to be a fact that the sales of Coca-Cola are much more numerous than that of any other soft drink?

A. Yes sir.

Q. Now, why is it that that is true as to persons who are grown up or those that are beyond the age of childhood when children do not take Coca-Cola to such an extent; or in other words, what is the reason for this difference between children taking it and those of more mature years?

A. You mean the reason for grown up people taking it and children don't?

Q. Yes.

A. I would base that on the fact that grown people will read advertisements; that is also a fact regarding patent medicines, while I won't take it, people buy it and take it every day but if the advertisement is withdrawn from a very popular proprietary medicine the sales will drop off until in time you do not hear of it.

Q. You find that newsboys and messenger boys smoke cigarettes?

A. Yes sir.

Q. And buy and eat other things that are detrimental?

A. Yes, sir.

Q. Now then, why is it that they do not take Coca-Cola and when it is advertised and other people of more mature years do take it, do you know?

A. Well, I explained that to you awhile ago, from the fact that the newsboy wants to get all that he can for his money; if he can get a saucer of ice cream and a glass of water on the side he is not going to spend that money for a drink, that is presumably the reason; it is all a matter of supposition on my part as to whether that is why he does it or does not, but I would take it that that is so.

Q. Does your store have a patronage from shop girls and girls from department stores?

A. Not very much; we are not in that district and

don't get much of that.

Q. And you don't pretend to say what drink is most popular with them?

A. No, I couldn't intelligently give you a report on that because I don't see enough of it. We have a sparing amount that come out of the office building across the street from us, but I reckon you would hardly class them as the same class as shop girls, a little different, a little higher grade.

Q. As a rule persons beyond the childhood stage consume more Coca-Cola than they do of any other soft drink beverage?

A. Well, no; I couldn't say that sir; I suppose if you put it to any one drink that would apply, but to take it as a total I happen to have a little data on that for this reason; of course, you know we watch the departments to see whether things are paying out or not, and sometime ago I noticed that we were buying an excessive amount of ice cream products, and when I figured up what we ought to have from the cream I found that the cream ran about fifty per cent of the counter sales; against this you have to take into consideration other soft drinks, lemonade phosphates and the limeades. In the summer season we use a barrel of limes every two weeks; they will average from twenty five hundred to three thousand limes, and each one makes a drink, and this is a pretty heavy amount of one item; and if you take it all in that way I don't suppose you could considder that it would begin to cope with all the other drinks put together, while it would more than do it with any particular one drink, but to take it as a whole it does not begin to.

Q. You serve lemon or lime in Coca-Cola don't you?

A. Not very frequently.

Q. Isn't it called for often?

A. No sir, some lime juice occasionally, but limes are mostly served with mint with us, we make a mint-limeade, we call it.

Q. Then they do not call for Coca-Cola with lime juice?

A. Yes, sir, occasionally, but not so much; just a few drops, but we do not encourage it, because that would be giving them something extra for their money.

Q. What character of fountain is at your place?

A. How was that?

Q. What character of fountain have you at your place?

A. Well, do you mean the name of the manufacturer of the fountain?

Q. No, I mean to ask as to the service, whether or not it is attached to the wall or is it the counter service? What

is known as the counter service?

A. It is the counter service.

Q. Now, how is the flow of the Coca-Cola syrup regulated, by what means?

A. It is a pump with a lever and the pump has a gauge on it.

Q. Now, when a customer calls for a double header or an extra strong glass of Coca-Cola, how does the boy arrange to serve him?

A. Well, our instructions to the boy, sir, in case people want it extra strong, or ask for it extra strong, is to make the bluff, and to give him as little as possible, but whenever we have given him what is going to him, that is all that he is entitled to—whenever we have given any one over the required amount, which is from one ounce to an ounce and a half, we are not making any money, and when it goes above that we do not want his business, and while it is true like all other houses that we have to contend with employees not doing as they are told, that is their negligence.

Q. What do you mean by making a bluff?

A. Well, in other words, we will say you come up to the fountain and ask for a Coca-Cola and ask that it be made extra strong, and the boy has already drawn the syrup, if he slips it back there and makes a bluff at it you don't watch him, and he don't have to put much in there to satisfy you. Now, there is another way of looking at that too—a great many people think they want more for their money than they are entitled to, and they ask for more to be put in when they really could not tell the difference, or tell any difference, but it is simply a desire to get a little more for their money than they ought to have; they can't tell the difference; I have seen it worked on them and not make any holler about it, and I think it is more in the hoggish inclination than anything else.

Q. And you have instructed your employees when an extra strong Coca-Cola is called for, or a double header, simply to run the bluff and make the bluff, for the boy to touch the thumb plate as if to draw the full discharge when in reality they are not giving the full quantity?

A. Yes, that is the idea.

Q. You say that is the idea?

A. Yes, that is one of the unfortunate things about the front service, they see too much; if I had it to do over again I would put in the old wall fountain with the boy between them and the counter, so they could not tell what he is doing.

Q. I will ask you, Doctor, what other drink, if any,

you have ever known of being called for extra strong, or a double header, or extra quantity of mixture. except Coca-Cola?

A. Well, they do it to a certain extent with a local drink called Pepsol; I suppose they imagine they are getting a digestive agent, and a fellow who feels real bad thinks a little more Pepsol would be better. I had a case a few days ago in the store—it was an absurd case, but it is one that will explain my position as to the desire to get more than one is entitled to. We had a customer who drank grape juice. The average grape juice bottle is about three ounces, the ten cent bottles; we serve it from a large bottle, making it a little more profitable to the house, and he insisted on a little more grape juice mixed with carbonated water from time to time, and the boy came back and told me the man had raised the grape juice requirement until it became unprofitable. I told him rather than hurt his feelings to put him back on the individual bottle, that is a bottle that he knows is all he is entitled to, and even that didn't satisfy him, but he got himself a pint bottle of grape juice and drank it at his office. It shows you that in that case this man was calling for a little more, and I suppose it was that same disposition to get a little more for the money than he was entitled to. And in that case the same proposition comes up again, to cut down the expenses, to keep it within the bounds of profit.

Q. You handle drugs?

A. How?

Q. You handle drugs?

A. Yes sir.

Q. Now, you know what caffeine is?

A. Yes sir.

Q. That is a drug?

A. Yes sir.

Q. What is its effect on the human system?

A. Well, its effect is supposed to be a stimulant the way I have always figured it, from the authorities on the subject.

Q. Have you ever tasted it to know what it was or its taste?

A. No.

Q. Or administered it?

A. Yes, I have seen it administered—the fact is I use to dispense it to a man in this town in five and ten grain doses for his own personal use, to a man who took it, a physician.

Q. Did the physician take it himself?

A. Yes, in five and ten grain doses.

Q. Did he take it as a stimulant?

A. Yes, I suppose so.

Q. Now, at your fountain, it is customary to first draw the water in the glass and then put the Coca-Cola contents in?

A. No, the reverse, the syrup is drawn first and then the water.

Q. Was it not administered during this very day by putting in the water first and then the Coca-Cola afterwards?

A. Well, I couldn't say whether it was or not, but I am giving you our instructiins; that is done sir from this reason, that if you draw your syrup in first and draw your water in without disturbing the syrup and stir it afterwards, you get a much better drink than if you drew it the other way. If you let the boy do it he will draw it the other way; he saves himself as much as he can.

Q. He will draw the water first?

A. Yes sir.

Q. If you let him do it?

A. Yes sir, he will do that every trip, and if he don't think you are watching him he will pull it across the fountain but our instructions are very specific in that respect there.

Q. What does a customer really get when he presents himself at your fountain and calls for "dope", Doctor?

A. Well, he gets Coca-Cola, that is the only thing we have on the fountain that is served; but the Coca-Cola people claim that a great many other substitutes are run in on them, but we do not use it—we do put in water on them but we don't substitute on them. We cut it 25 per cent water on account of the same thing we talked about awhile ago, wanting more for the money—we use water.

Q. Then you buy Coca-Cola syrup and mix three parts of the syrup to one part of water?

A. Yes sir. We have always done that.

Q. And you have that arrangement with the Coca-Cola Company?

A. No sir, that is done after it is taken from the barrel.

Q. Well, I say they know that is the way you dispense it?

A. No, I don't know that they do; I couldn't say that; if they were to come in and ask the question I don't know that I would tell them so; it is none of their business or affair after it becomes our property, we can dispense it any way we want to or please to.

Q. What is the style of your business, doctor, is it a corporation or a partnership or what?

A. A corporation.

Q. And what is the corporate name?

A. The DeMoville Drug Company.

Q. How long have you conducted business under that name?

A. I think they were incorporated about ten or twelve years ago; couldn't speak positive.

Q. Now, what business were you in before you went with the DeMoville Drug Company?

A. In the drug business.

Q. And where?

A. Six years in Chattanooga and a couple of years in Wartrace, Tennessee, and I believe I was a couple of years—I would not swear in this place about two years of the time I recollect.

Q. Did you ever own any stock in the Coca-Cola Company?

A. No sir.

Q. Does your corporation own any stock in it?

A. No sir.

Q. Do you know of any of the members of the corporation owning any stock in it?

A. I do not.

Q. Who are the local distributors here of the Coca-Cola Company?

A. I only know of two—Berry DeMoville and Company and Spurlock, Neal and Company; I think there are others here, but I don't know who they are.

Q. Do you dispense complimentary tickets at your store?

A. No sir, we never dispensed the tickets; they do that themselves.

Q. Do they do so at your store now?

A. No sir.

Q. How long since any have been dispensed there?

A. Well, I don't know; it seems to me that every month we get a few tickets, more or less; I have not noticed any great amount of tickets in several months; whether any there or not I couldn't say now, but the cashier takes them in and she gets a bunch of them brings them back to me, but I have not noticed much of them in the last four or five months, but we have some every month.

Q. How are they distributed?

A. I do not know.

Q. You do know in a general way when you get these complimentary tickets that they are sent out by the Coca-Cola Company from Atlanta, and that you take them as cash and send them in turn to the Coca-Cola Company

and get credit for them, is that the method of doing that business?

A. Well, I don't think so; I think their man, or representative, probably comes to the city and distributes them, that is my opinion.

Q. Now, what does your company get in exchange for the tickets?

A. We get five cents in money.

Q. And from whom?

A. The Coca-Cola people, not from them either, we turn ours in to Spurlock, Neal and Company, their local jobbers here.

Q. Ladies don't turn out as well in inclement weather of course, as they do in weather that is fair and inviting?

A. No sir.

Q. And ladies patronize very largely your establishment, that is your soft drink department, don't they?

A. No, sir, have not got as good a ladies patronage down there as the average store.

Q. What does your patronage consist of, the Coca-Cola drinkers, what class of people are they?

A. They are mostly men.

Q. To what class do they belong, are they clerks, or what?

A. They are people of every imaginable class, clerks, lawyers, business men and all classes of course; the wholesale district is right below us, you know. That street there is mostly patronized by men, it is a stag street or you might call it that.

Q. How many boys are on duty at your fountain?

A. We have through the day four boys at work behind the fountain.

Q. What ages are they?

A. Well, I suppose on an average say, 18 20 and 25 and I suppose the oldest fellow is probably twenty eight years old.

Q. You would hardly call those from 20 to 28 boys?

A. Well, we call all of them, even if he was forty years old, call him "soda fountain boy" the original soda fountain man was a boy and it goes down with that; everything classed as a boy in that.

Q. Now, you say if you drank or were to drink Coca-Cola you probably would drink fifteen to twenty a day?

A. That is, if I were to drink it to quench my thirst because I drink that much water a day.

Q. And you think the average consumer of Coca-Cola takes from four to six glasses?

A. I should judge about that, yes.

Q. You see the men in your store during the day, your regular customers approximately that number of times do you?

A. Yes, I should suppose so.

Q. What is the number of employees in your store?

A. Run along about twenty eight people, including the porters, in all included.

Q. And you have general supervision over them?

A. Yes sir.

Q. And aside from watching these twenty eight people why you also wait on and welcome your customers as well?

A. Yes sir, a part of the day that every man like all businesses of that kind has to take his turn on the floor—you might say through the dinner and supper hour I take my turn on the floor the same as the clerks in the house and wait on customers, wait on you as quick as anybody else. Drug store clerks have to work a little harder than in your line of business.

Q. Do you know an article generally termed by the trade "coca" and which has been for years?

A. Yes sir.

Q. What is the chief constituent of coca, the active principle of it, so to speak?

A. Do you mean the coca leaf or the powdered coca leaves that you make fountain chocolate out of?

Q. I am talking about (spelling) coca.

A. I don't understand your question as you put it in there. I believe you asked me what was the use of that.

Q. I asked you if you were acquainted with it?

A. Yes sir, I am.

Q. Now, I ask you what is the active principle of coca, the chief ingredient of it?

A. Yes sir.

Q. And what is the active principle of that?

A. Well, the active principle of cola I wouldn't say because I don't think that—I wouldn't say because I don't know; I don't recall what the active principle of kola ——

Q. You know what kola is made from?

A. The kola nut.

Q. Do you know what effect it has on the human system?

A. It has a stimulating effect.

Q. What effect has cocaine?

A. It also has a stimulating effect.

Q. Coca-Cola is sometimes called "coke" by a customer who presents himself at your fountain, and when he calls for "coke" you know he means Coca-Cola?

A. Yes sir.

Q. How long have you known of the substance "coca" and also "coca", ever since you have been in the drug business?

A. Yes sir.

Q. They are well known substances that have been known to the drug trade for years and years?

A. Yes sir.

Q. There is not any limit on the sale or number of glasses that a customer can get in your store?

A. No sir.

Q. He can get it as long as he can get nickles?

A. Yes, that is the idea exactly; we have no limit.

Q. And, if he wants it extra strong, why you are willing to make it extra strong to the extent of double quantity, if he pays the double price?

A. Yes, sir that is the idea.

Q. And if he does not you make it only a very little stronger and run the bluff?

A. I have always told my men whenever a man wanted anything or went beyond the limit of profit it was time to turn him over to a competitor, and let him sell him awhile, is the way I feel about those things.

Q. You do have a double-header called for very frequently?

A. I suppose so, yes.

Q. And by that you mean or you understand an increased quantity of coca-cola syrup?

A. Yes, sir.

RE-EXAMINATION,
BY MR. McALLISTER:

Q. Doctor, I don't know whether I asked you awhile ago. How long, as far as you know, has coca-cola been on the market?

A. Well, I think that I answered that question somewhere awhile ago, that to my knowledge it has been sixteen years, as long as I have been with a drug store that had a soda fountain.

Q. How many gallons of coca-cola syrup do you handle in the course of a year?

A. I think we run about two thousand, sir; I believe our record has been that for the last seven years.

Q. Where is your place of business located in Nashville?

A. At the corner of Church and Fourth, Fourth Avenue North.

Q. State whether or not that is in the business or residence section of the city?

A. The business section.

Q. How do your sales of coca-cola compare with that of other druggists in the city, as to the number of gallons you handle a year?

A. I don't know about that, sir; I would judge that the people next door to us run us a pretty close race, probably do as much as we do; as to other stores, I couldn't say, I really do not know much about then and don't see much of them. I do see every year a report from the Coca-Cola Company on the town but have never paid any attention to it.

Q. Now, doctor, I believe you stated that caffeine was a drug or recognized as such?

A. Yes, sir.

Q. State whether or not rhubarb is also recognized as a drug?

A. Yes, sir.

Q. State whether or not ginger is also recognized as a drug?

A. Yes.

Q. Please state whether or not the fact that a substance is a drug necessarily implies that it is injurious?

A. Oh, no, it does not, no sir.

Q. Now, I will ask you also, doctor, to state whether or not the substance known as coca-cola, this product known as coca-cola, is called "dope" by its manufacturers, and whether or not it is ever advertised as "dope"?

A. No, I have never seen such an advertisement of it.

Q. State whether or not it is ever advertised as "coke"?

A. No, sir.

Q. Please state whether or not the average customer who calls for "dope" or "coke" does so with the expectation of getting a narcotic or opiate?

A. Well, as I understand it, he calls for it with the expectation of getting coca-cola.

Q. State whether or not he does so under the impression that, and I am asking you now as a man who is familiar with the soda fountain business, whether or not there is an understanding on the part of the customer when he calls for coca-cola as "dope" that it contains a narcotic or a drug?

A. I don't think he considers anything about that; I think it is a matter of habit, you might say, I don't think he stops to figure out what he is getting or pays any attention to that part of it.

Q. I will ask you if "dope" is the name of the drink?

A. Sir?

Q. Whether or not "dope" is the name of the drink?

A. It is not.

Q. Then why do people call for it under the name of "dope"?

A. Well, I don't know why that is. It is pretty hard to tell how these things originate.

Q. Now, doctor, you have heard a child called a "kid."

A. Yes, sir.

Q. Is it generally understood when you call a child a "kid" it is a young goat?

A. No, sir.

Q. Well, what is the substance known as coca, what is coca?

A. Coca is a herb or plant, the part we use or are supposed to use is the leaf that grows in South America.

Q. Then, do I understand you that when a customer comes into the store and calls for coca that he is given the coca leaf?

A. No, sir, if he calls for coca we would think that he wanted the powdered red chocolate which is used to make a beverage known as breakfast coca.

Q. Now, if one of your customers or if the average customer desired to get coca leaf from you under what name and how would he call for it?

A. I suppose he would come in and call for coca — I don't recall selling a man a package of coca leaves in my life.

Q. Doctor, state whether or not there is on the market and recognized by the drug trade a substance known as coca other than the coca plant?

A. No, I don't know of anything.

Q. Now, what is kola, doctor?

A. That is a nut or plant.

Q. Do you mean to say it is the nut of the kola plant?

A. What did you say?

Q. Do you mean to say it is the nut of the cola plant?

A. Yes, sir.

Q. How would a customer desiring to buy cola nuts call for them?

A. He would call them cola nuts.

Q. Then do you understand there is a substance generally recognized among the drug trade as cola outside of the cola nuts, other than cola nuts?

A. Yes, sir. Coca is the leaf of the coca plant, cola nut is the nut of the cola tree, and when he would want coca leaf I suppose he would call for "coca leaf" and when he wants the cola nut he calls for "cola nut."

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Now, this cocoa you say you sell in the form of a

powder is spelled (spelling) c-o-c-o-a, but the (spelling) c-o-c-a that contains cocaine or the active principle of cocaine is spelled (spelling) c-o-c-a?

A. Yes, sir.

Q. And if (spelling) c-o-c-o-a, that is coca was called for, you would give the powder?

A. Yes, sir.

Q. And if coca were called for that is cocoa—but if he spelled it out (spelling) c-o-c-a you would give him the coca leaf, but if he didn't you would give him the powder?

A. I do not think anyone would attempt to call for a thing of that kind without prefixing it with the leaf.

Q. Is the name (spelling) c-o-c-o-a?

A. Yes, sir, coca.

Q. It is not set down there as "coca" leaf?

A. No, sir.

Q. It is set down there as "coca"?

A. Yes, sir, that is true.

Q. Then it is recognized by the drug trade as being "cocoa" and not "coca leaf", and by medical men as well?

A. I think you will find if you look into the current jobbing list, you will find that it is listed under coca — leaf ——

Q. (Interrupting) I am speaking of medical men and not the current jobbing list. I am speaking of medical men, the practitioner and pharmacists, don't they very readily recognize a distinction between "cocoa" and "coca?"

A. Yes, they do, but we were talking from a trade standpoint, I understood so awhile ago, and I still maintain my position, if you were to come into my place I would naturally suppose you wanted cocoa, notwithstanding that you might speak it more plainly than the average person does — it is not customary to have calls for coca leaves or coca, but I do sell powdered chocolate.

Q. Because that is served as a harmless beverage?

A. Yes, sir.

Q. And the other is a very powerful drug?

A. I don't know its power in that state; when you get it reduced to cocaine it is a different proposition; it would take quite a few leaves to make much cocaine.

Q. Cocaine is a very powerful drug, though?

A. Yes sir.

Q. Now, you say that in your opinion, doctor, the average customer who calls for "dope" or "coke" or coca cola indiscriminately, as they use these terms, don't know what he is getting?

A. No, I said he expected to get coca cola.

Q. But I thought you said when he called for "dope"

that he didn't know what he was getting?

A. Well, I don't think I put it that way. I think that came up when the question was asked me as to whether or not he expected to get the active principle of caffeine — it was brought in there some way, and I remarked that I didn't think he thought anything about that part of it but merely called for a beverage he had been drinking, but if he comes in and calls for "dope" or "coke" or "coca cola" we believe as honest business men that he wants the drink known as "coca cola," and for that reason if a man was to come in and call for Turkish Rhubarb, we try to give that and nothing else in its place.

Q. The active principle of caffeine is a stimulant, a brain stimulant?

A. I don't know the principle, that is its name, though.

Q. Well, that is the result of its use?

A. Yes sir.

Q. It is a stimulant?

A. Yes, sir.

Q. And that is the effect it has on the average man that takes it?

A. Yes sir.

Q. And if a man takes from four to six glasses a day of coca cola containing from an ounce to an ounce and a half of the syrup, he gets to that extent that much more stimulation than normal?

A. Yes, if it has caffeine in it.

Q. What do you mean by the term "drug" doctor, define it please?

A. Well, a drug is a substance, as we understand it in the general way, something that is used as a remedy to relieve the ails of human kind.

Q. What is caffeine then, used to relieve what kind of ailments?

A. Well, caffeine is used in headache to some extent, and it is sometimes, I suppose, given to counteract the ill effects of depressing headache medicine, that was always my notion of it, and it enters into the composition of the most of these depressing headache remedies on the market for that reason.

Q. Do you dispense caffeine at your store, that is in the drug form, that is where it is not taken as coca cola, without the prescription of a physician?

A. Yes sir.

Q. Would you sell it to the average consumer?

A. Anybody who has the price.

Q. And anybody who wants caffeine you give it to them?

A. Yes sir, anybody who has the price.

Q. Now, what do you, doctor, understand as "dope" aside from coca cola, does it have any other meaning?

A. Well, when we use to sell cocaine here, before the law stopped that, they used to call for "dope" and expected to get five cent powders; that is the only case, I believe, of anything else being used by that, but it has been sometime ago, and I don't know just to what extent.

Q. That was stopped by the law?

A. Yes, of the State.

Q. And now then, when "dope" is called for you understand it is coca cola?

A. Yes sir.

RE-EXAMINATION,
BY MR. McALLISTER:

Q. Doctor, are you familiar with athletic parlance?

A. No sir.

Q. State whether or not you have ever heard the word "dope" used in a sporting sense?

A. Only among race horse men, in horse racing.

Q. Now, what meaning did the word have in that connection?

A. Well, with a race horse man when he says "dope" he means to give a horse the various formulas that they carry with them. I have seen a good many of them. They are composed of, I believe the latest now is heroscine — nitroglycerine and let me see what else they get out — I saw one not long ago, a fellow wanted it put up and I turned him down on it, and strychnine I think they use.

Q. Have you ever heard the word used as indicating advance news on sporting events, getting the dope on a certain race?

A. Yes, that means to get a pointer as to which horse is likely to win, as I understand that.

Q. Then, as a matter of fact, the word "dope" is a word that has a very wide limit as to its meaning, has a variety of meanings?

A. Yes sir. It is supposed to put you next in other words, to make you wise.

Q. Doctor, if you remember how does the United States Pharmacopae define the word "cocoa", do you recollect what it has to say or says about cocoa?

A. No, I don't remember, I have not seen it in 20 years.

Q. I mean as to what it is, not as to its effects?

A. No sir.

Q. A description of the compound?

A. Well ——

Q. No, does it state, what I am trying to get at is this:

whether or not the United State Pharmacopea describes it as a plant or as a commercial product known to the trade under that name?

A. Why, it describes it as a plant, as I remember it; I don't know much about its commercial use.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. This heroscine you spoke of administered along with nitroglycerine and some other substances, strychnine, I believe, to race horses, is a very powerful drug itself, is it not?

A. Yes, it is.

Q. Now doctor, what is the object of administering that mixture or compound to race horses?

A. I think it is a stimulant.

Q. And they by doping them will get unusual amount of activity?

A. Well, I think so.

Q. And accelerate speed?

A. Yes, I suppose so.

Q. And a horse is said to have been doped when he is given that abnormal stimulant?

A. Yes sir.

RE-EXAMINATION,
BY MR. McALLISTER:

Q. Have you observed, doctor, that coca cola has a similar effect to nitroglycerine or heroscine?

A. No sir, none in the world.

Mr. Candler: I will read the deposition of JOSEPH M. CONNABLE, the first witness called, of lawful age, first duly sworn, deposed:

DIRECT EXAMINATION,
BY MR. McALLISTER:

Q. Where do you live, Mr. Connable?

A. Memphis, Tennessee, 1002 Reyner Avenue.

Q. What is your business?

A. In the retail drug business.

Q. How long have you been in that business?

A. Since January, 1907.

Q. State whether or not you operate a soda fountain in connection with your business.

A. Yes, I do.

Q. How long have you been familiar with the soda fountain business?

A. Since January, 1907.

Q. Please name, Mr. Connable, some of the principal

drinks dispensed at your soda fountain.

A. Well, ice cream sodas of all kinds, different flavors; Coca-Cola, Pepsol, Jersey Creme, Chocolate Milk.

Q. How is the drink that you have called "Coca-Cola" ordinarily served to the customer at the fountain, Mr. Connable?

A. Supposed to be one ounce of syrup and from five to six ounces of carbonated water, sometimes with crushed ice and sometimes without; sometimes with a little flavoring extract, such as lemon and orange, and sometimes without.

Q. Where and by whom is the syrup which is the basis of this drink made?

A. The Coca-Cola Company, Atlanta, Georgia.

Q. How long have you been acquainted with this drink?

A. I have been acquainted with it ever since it has been on the market.

Q. And how long is that?

A. We have been selling it, the people I am with since I have been with them, since January, 1907.

Q. How long has it been on the market?

A. Well, I would say twelve to fifteen years, possibly longer, I have no means of knowing absolutely.

Q. Please state, Mr. Connable, whether there has ever been within your knowledge any drink, beverage or food product placed upon the market under the name of Coca-Cola other than that manufactured by The Coca-Cola Company of Atlanta, Georgia.

A. No, none to my knowledge.

Q To what extent has the drink been advertised within your acquaintance with it?

A. Well, very extensively, and more so than any other drink we have ever handled.

Q. Describe as nearly as you can the general nature of this advertising, Mr. Connable, what does it consist of?

A. Well, newspaper advertising, free tickets calling for free drinks at the fountain; bill board advertising and window displays, and every variety, I don't know I can remember them all just at this time.

Q. How do these advertisements usually read?

A. I believe they generally call attention to the fact that Coca-Cola is a refreshing drink, and invigorating, I don't know that I can specify it in any other way now.

Q. State whether or not you have ever known of any other drink, beverage or food product being advertised as Coca-Cola other than that manufactured by The Coca-Cola Company of Atlanta, Georgia.

A. I don't know of any being advertised as Coca-Cola.

I know that there is a great deal sold us—I wish to change that, please, sir (addressing stenographer.) — that a great deal is offered us for sale by people claiming to sell a drink that is made the same as Coca-Cola and claiming that we can substitute that but we never substitute and don't handle those drinks unless they are sold directly in the name or under the name by which they are advertised and sold us.

Q. Now, what has been your observation, Mr. Connable, as to the average number of glasses of Coca-Cola that a man who drinks Coca-Cola at all, will drink in the course of a day?

A. That would be hard to state an wise accurately but we have customers that drink from one to three and four, but when you say on an average I don't suppose it would be over one and a half or possible two, from my observation.

Q. Please state, Mr. Connable, what your observation has been as to whether or not drinking Coca-Cola creates in the person who drinks it a craving or desire for a larger number of glasses of Coca-Cola or increased quantities of Coca-Cola.

A. I wouldn't say that it created a desire any more than any other drink; as for myself, it creates a desire not to want any more. The Coca-Cola sold at our fountain is sold to the customers about the same as any other drink; we have some who overindulge in chocolate milk, and the milder drinks the same as Coca-Cola or any drink for which we buy the syrup.

Q. How is chocolate milk made, Mr. Connable?

A. From an ounce to an ounce and a quarter of chocolate served from five to six ounces of milk.

Q. Sweet milk?

A. Yes, sir, and never served with ice unless called for by the customer; ice kills the chocolate flavor.

Q. Now, what is the relative popularity at your fountain of chocolate milk and Coca-Cola?

A. Why, we sold last year approximately one thousand gallons of Coca-Cola syrup and the last twelve months we sold 45,000 drinks of Chocolate Milk. The reason I know this I have kept a record of the milk bottles caps that we used at the fountain as we serve each drink from an individual bottle of milk.

Q. About how many gallons of chocolate syrup would the forty-five thousand drinks of chocolate milk constitute?

A. I can't give you that figure without figuring it ont.

Q. Well, I mean approximately.

A. Chocolate syrup runs from an ounce to an ounce and a quarter per drink; 128 ounces to the gallon of course, but as a rule we use a little heavier quantity of chocolate than we do of Coca-Cola to the six and seven-ounce glass.

Q. State whether or not, Mr. Connable, there has ever been a case within your personal knowledge of anybody being injuriously affected by drinking Coca-Cola.

A. There never has to my knowledge.

Q. When a man wants a glass of Coca-Cola, by what name does he usually call for it, Mr. Connable? I mean generally and usually speaking.

A. Coca-Cola.

CROSS EXAMINATION,
BY MR. MILLER:

Q. Now, when he calls for "Dope" what does he mean or what do you give him?

A. Coca-Cola.

Q. How many services do you have at your fountain?

A. Three.

Q. How many serving boys?

A. Three. I mean by that we have three men that have different hours, sometimes we split the hours but two of them as a rule all the time, but sometimes only one; we have three dispensers altogether.

Q. During the busy portion of the day, that is, the working hours of the day, you are supposed to have two on duty?

A. Yes, sir; we have a very large theatre business or trade, and before and after the matinees and night performances we always have two on.

Q. What character of fountain do you have, what is termed the wall-fountain or the counter service;

A. We have the counter service — ours is a hollow square practically, the counter has four sides with a hollow center and the dispensers work around the four sides.

Q. So that the customer can see the method of service and the manner in which it is emitted from the tank into the glass?

A. Yes, sir.

Q. Now, what is the means by which the syrup is passed from the fountain into the glass.

A. By a pump.

Q. Does that work with a lever?

A. Yes, works with a lever, a ball top. The server or serving boy simply touches the lever which pulls the top of the pump down and the syrup is thrown into the glass.

A. It is an automatic arrangement whereby a certain amount is emitted into the glass; in our glass, — I mean,

in our fountain, there are screws set so that a certain amount of the syrup can be given with each drink. In this particular fountain the screws are put in by myself and fastened so that each drink serves so much.

Q. But do those screws vary as the fountain wears, and does the quantity emitted increase or decrease?

A. I have never had any notice of the screws changing unless the dispensers themselves change them — I have had some trouble with my dispensers increasing the quantity of the syrups.

Q. Why do they do that?

A. Some customers want their drinks increased, and some dispensers naturally think that when they give a customer a large quantity they are helping trade.

Q. Now, your drinks, including Coca-Cola, are sold indiscriminately to whoever orders or whoever wishes to buy them, no distinction made?

A. No, sir.

Q. You sell it to the old, to the young, to the nervous and to the robust and all alike, just whatever they call for they get?

A. Yes, sir.

Q. The drinks, that is, of Coca-Cola at least, the usual drink is five cents a glass, isn't it?

A. Coca-Cola and drinks of like character; yes, sir.

Q. Do you use the graduated glass?

A. No, sir.

Q. How do you ascertain whether or not a screw has changed so as to emit a larger quantity of the syrup than you intended?

A. Well, I have charge of the fountain myself, and frequently I go over these pumps with our head dispenser to see what quantity of syrups are given. My reason for this was that at times we have had complaints from customers saying that certain drinks were not satisfactory, which caused an investigation, and again I have had times when the soda business was not profitable and that caused an investigation; for this reason I watch it myself.

Q. What is your position in your store, that of general manager?

A. I may be termed so, I have charge of the office, the finances, fountain, the cashiers, cigar department and candy department. Mr. Osborn alone has charge of the drug department; I have no knowledge of drugs at all.

Q. You are, as I understand, not a pharmacist then?

A. No, sir.

Q. Not a registered pharmacist?

A. No, sir.

Q. How many employes under your supervision?

A. Well, all employes in the store are really under my supervision.

Q. How many is that?

A. Let me see — sixteen, I think.

Q. Now, isn't it true that this Coca-Cola syrup contains such a quantity of sugary substances as that it coagulates or congeals on the fountain or pump, I mean at times, and clogs it to a certain extent so that the desired quantity is not emitted by one stroke or one push of this lever or pump?

A. I have never had any complaint of that in my experience any more with the other — I mean any more than with the other syrups.

Q. Have you had any complaint at all as to that or any other syrups?

A. Yes, sir, we have that with all syrups, especially where simple syrup is used in the making of them. We have a great deal of trouble with the top and sides of it becoming unclean or rather sticking, and have it cleaned thoroughly but no especial trouble with any of the pumps because my attention has never been called to any of the pumps in particular.

Q. Is the pump kind of a sliding metal piece ——

A. (Interrupting.) I don't know that is — I can describe it to you — it is a lever, a pump with valves, and in the bottom — I mean, when the top part of the pump is pulled down it causes — I don't know just what term to use — but causes the pump to force out a certain amount of the syrup through the neck of the pump.

Q. Now, isn't it true that this sugary substance that is in the Coca-Cola syrup will thicken gradually on the mechanism of that pump to the extent that the desired quantity or the same quantity that would be emitted when the pump is new won't be emitted after it has been in use five or six months?

A. No, I can't say that it will. I have broken more pumps and have more trouble with the pumps we use on the chocolate syrup than anything else, and I have never attributed that trouble to anything other than the thickness of the syrup. We aim to clean our pumps, all of them, regardless of what syrup they handle, two or three times a week, and so far as one syrup thickening and destroying the efficiency of the pump more than another, I have no recollection of it ever having been called to my attention other than the chocolate syrup pumps are frequently broken.

Q. How many pumps have you in your fountain?

A. Thirty.

Q. How many of them are used for lime syrup?

A. Only possibly two; I think it is two because I try to have the fountain stocked all the time with these syrups called for most frequently so that when two dispensers are on duty, the dispenser on each end can serve directly all the drinks. Now, the drinks that we use most seldom are right in the center so that each dispenser can get to them, and I think that eight of those pumps or eight of the drinks only have one pump each.

Q. What are those?

A. I can't say positively, one I am quite sure is Hires Root Beer, and another Jersey Creme, when we sold it—we don't sell it any more — Pepsi Cola — can't say what the others are, there are eight of them, I think. I would not want to mention any more for I am not sure as to what the names are.

Q. If you are correct about the eight, that would leave twenty-two more pumps?

A. No, I beg your pardon, that would leave ten or eleven more possibly because in the other twenty-two pumps I try to have duplicate syrups.

Q. What are those 22, I mean, those eleven?

A. Well, Coca-Cola; if I recollect correctly we have four pumps of Coca-Cola; two of chocolate, pineapple, strawberry, possibly peach, vanilla syrup — vanilla simple syrup, I should say. I don't remember what the others are.

Q. Then, each of these dispensers has one of the more popular drinks except Coca-Cola, and of that he has two?

A. Yes. Now, I would like to make an addition there — I don't remember whether four pumps of chocolate, I would not want to say because not clear on that.

Q. Now, you are not really very well informed about that fountain service, are you?

A. I think so, pretty well, but I don't try to keep them in mind because our stock man has charge of that syrup.

Q. Do you know what is in Coca-Cola?

A. No, sir; I do not.

Q. You say you are not acquainted with drugs at all?

A. No, sir.

Q. You don't know the effect of caffeine on the human system?

A. I do not; I have never studied it.

Q. You don't know, then, that it does invigorate, or not?

A. No, sir.

Q. But you know that Coca-Cola advertisement through

this section says that it does invigorate the human system?

A. Well, my recollection is that it is said Coca-Cola is refreshing and invigorating.

Q. Now, is the term "Dope" applied to any other substance in your store that you sell except Coca-Cola?

A. Recently other drinks have been put on the market and offered us that have been recommended to us as "Dope" — have been offered us so we could sell them whenever "Dope" was called for, but we don't substitute and when they call for Coca-Cola we give them Coca-Cola, when they call for "Dope" we give them Coca-Cola.

Q. Those are other drinks that were put on the market and were represented to you or recommended to you,— rather, that you could sell as "Dope." Now, those drinks have been put out of business by the United States Government, have they not, recently?

A. I cannot say if they have because some of them have been offered us within the past week or ten days.

Q. Do they call for Coca-Cola sometimes as "Coke" or do you know how that is?

A. Yes, I think I have heard it called for that way.

Q. And that is also an abbreviation for cocaine, is it not, — "Coke?"

A. That is an accepted abbreviation for cocaine, yes, I believe.

Q. And "Dope" is the accepted abbreviation for any drug that serves as a narcotic, is it?

A. I couldn't say when it comes to drugs; we accept a call for "Dope" as a call for Coca-Cola.

Q. Well, when you speak of a man as a "Dope fiend" you understand he is a man addicted to the use of drugs?

A. Yes, sir.

Q. Now, what sort of an arrangement is this about the gratuitous tickets or free tickets you speak of, how do you work that at your store?

A. Well, whenever a ticket is offered us calling for Coca-Cola, we serve a glass and accept the ticket in payment; these tickets are redeemed by The Coca-Cola Company people, or by any other beverage for which they call, I mean by the manufacturer of the same, at the price, the average price for which the drink is sold.

Q. Now, that is a method of advertising that has been followed by a great many soft drink manufacturers, is it?

A. Yes, sir.

Q. And it is not practiced any more so by the Coca-Cola people than it is by other soft drink manufacturers?

Q. No, I think some others are practicing it now more

than the Coca-Cola people.

Q. And you are not prepared to tell me of what substances coca and cola consist of?

A. No, sir.

Q. Because you are not a druggist or pharmacist?

A. I am not informed.

Q. Now, what business were you engaged in prior to entering the retail drug business?

A. In the real estate business, representing William M. Randolph, I had charge of his property here. I did not enter the retail drug business from a matter of choice—it was a case of self-preservation with me, that is, so for as giving it my time was concerned.

Q. Now, in the service of any drink, Coca-Cola included, when a customer calls for a double-header, or double strong or a good sized drink, what do your fountain boys do?

A. The fountain boys have instructions to serve but one portion of each syrup with each drink for the regular price. If they call for a double header, as you term it, they are supposed to give it and charge the double price; the only exception to this is capudine and bromo-seltzer.

Q. And a double header, of course, is understood to mean a double quantity of the syrup?

A. Yes, sir.

Q. And that is not an infrequent term in the fountain trade, is it?

A. Well, yes.

Q. You very frequently hear it called for?

A. Yes, sir.

Q. Now, sometimes a fountain boy, to make believe that he is serving double quantities of the mixture, will give this pump a couple of quick jerks, does he?

A. He does not work for me if he does.

Q. So far as you know ——

A. (Interrupting.) If he does, he does not work long.

Q. But if a double header is called for, why, he is supposed to put in double quantity and charge him at the double price?

A. Yes, sir.

Q. Those are his instructions?

A. Yes, sir.

Q. Did you say that this drink of Coca-Cola was unpalatable, that you don't care to take any of it yourself?

A. Well, I never tried to drink it but once; I can't drink anything that has carbonated water in it on account of kidney trouble, but I did try one drink of Coca-Cola; never touched it since.

Q. Did it impress you as being unpalatable, is that the way you term it?

A. No, I would say it was caused from the carbonated water; I don't drink anything with carbonated water in it.

Q. It is universally served in carbonated water, is it?

A. Yes, sir, but the reason I taboo carbonated water is because my physician has stated I should not drink it, and whenever I do drink carbonated water I have trouble with my kidneys.

Q. Then the carbonated water alone and independent of the syrup has a deletrious or injurious effect on your kidneys, in your case?

A. Yes, in my case.

Q. And for that reason you do not use this drink and have never tried it but once?

A. Never tried it but once.

Q. Did you find the drink palatable or otherwise when you tasted it?

A. Well, I couldn't say that I enjoyed the drink. I don't know that I would care to repeat the drink, but I attributed it as much to the carbonated water as I did to the syrup, to the syrup that was in the drink.

Q. Carbonated water tastes like any other water except it has some gas in it?

A. Causes gas on my stomach, is the way it effects my kidneys.

Q. You don't taste the gas when you are drinking the water, that is an after-effect?

A. Yes, I would say so; I never drank a glass of carbonated water without syrup to my knowledge.

Q. You have tasted Apollinaris Water, have you not?

A. I don't know that I have ever ——

Q. You have taken White Rock?

A. Yes, but I had reference to carbonated water served at the fountain without syrup.

Q. White Rock is a carbonated water?

A. Yes, sir.

Q. Are you acquainted with Mr. Pidgeon, who has been present during your examination?

A. Yes, sir.

Q. What business is he engaged in?

A. Why, I think he is the local manufacturer here of the bottle plant for — I mean the local manager of the bottle plant for the Coca-Cola Company. I don't know whether he owns the plant or what connection he has with it, but my impression is he manages it either for himself or for the Coca-Cola Company people.

Q. He at any rate arranged with you to come up this

morning and give your deposition?

A. Yes, sir.

RE-EXAMINATION,
BY MR. McALLISTER:

Q. Mr. Connable, to what extent do children call for Coca-Cola from your observation?

A. We have not a very large trade that depends on children; we have a few but they call for Coca-Cola very little in our store. They call principally for sherbets, ice cream and sundaes and ice cream sodas.

Q. Mr. Connable, when people call for "Dope," please state whether or not the understanding is that they are calling for it with the idea that that is the name of the drink, or that is simply a slang expression for Coca-Cola.

A. Well, we certainly understand that it is a slang expression for Coca-Cola.

Q. Now, "Coke" is an abbreviation, I believe you have stated, for cocaine, usually accepted, you say, as an abbreviation for cocaine?

A. Yes, sir, generally so, I think.

Q. Now, state whether or not it is not also an abbreviation for Coca-Cola.

A. Yes, I have heard Coca-Cola called for under the name of "Coke."

Q. How often, Mr. Connable, do you have calls for double-headers of Coca-Cola?

A. I am not in position to say accurately because I do not stay at the fountain myself. I stand around there quite a good deal and the service — once in a while but not very often.

Q. Well, you have those calls once in a while, but not very often?

A. That is right.

Mr. Candler: I will now read the deposition of F. W. WARD, the next witness, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION.
BY MR. McALLISTER:

Q. Where do you live, Mr. Ward?

A. Here in Memphis.

Q. What business are you in?

A. In the drug business.

Q. The wholesale or retail?

A. Retail.

Q. How long have you been in that business?

A. I have been in it for thirty-five years.

Q. Please state whether or not you in connection with

your retail drug business operate a soda fountain.

A. At the present time?

Q. Yes.

A. Yes, sir.

Q. How long have you operated a soda fountain?

A. Do you mean personally?

Q. How long have you been connected with a drug store, either personally or otherwise — I will first ask you whether you are familiar with the soda fountain business.

A. Yes, sir.

Q. Now, how long have you been so familiar with soda fountain business.

A. Since — about twelve years, possibly a little over that.

Q. Now, name some of the principal drinks dispensed at your soda fountain.

A. Liquid drinks?

Q. Yes.

A. Well, we dispense a good deal of limeade, lemon phosphate, egg drinks, Coca-Cola.

Q. How is the drink known as Coca-Cola that you have referred to ordinarily served to a customer?

A. Well, we put about an ounce in an eight-ounce glass, fill it up with carbonated water.

Q. An ounce of what, do you mean?

A. Coca-Cola.

Q. Of the Coca-Cola syrup?

A. Yes, sir.

Q. Where and by whom, Mr. Ward, is the syrup which is the basis of this drink manufactured?

A. It is manufactured by The Coca-Cola Company of Atlanta, Georgia.

Q. How long has the drink been on the market to your knowledge?

A. Well, I would roughly estimate about twenty years, going back from the time I left Mr. James S. Robinson here. I was with him for sixteen years, and he installed a fountain and kept it there for a couple of years, and I think it was about that time we had Moxie on the market, and he discontinued the fountain, and we had no fountain then, but my recollection of it is Coca-Cola was on the market then.

Q. How long have you been familiar with it, since that time?

A. Off and on; yes, sir.

Q. Please state, Mr. Ward, whether or not within your knowledge there has ever been any other drink, beverage or food product placed on the market under the name of

Coca-Cola other than that manufactured by the Coca-Cola Company, of Atlanta, Georgia.

A. None that I ever saw or knew of.

Q. What is your observation, Mr. Ward, as to the average number of drinks of Coca-Cola that the average man who drinks Coca-Cola at all will drink in the course of a day?

A. Do you mean as a general average of everybody who comes in the store and drinks Coca-Cola.

Q. As a general average of all who drink Coca-Cola, what does the average man drink, how many a day will he drink on an average?

A. The average man who drinks it will drink three, anyhow.

Q. Three?

A. Yes, sir.

Q. What effect, Mr. Ward, do weather conditions have on the demand for Coca-Cola?

A. I never noticed any.

Q. You say you never noticed any?

A. Oh, do you mean between the winter and summer seasons?

Q. Yes.

A. I suppose more drink in the summer than in the winter of all carbonated beverages; of course, more is drunk in the summer than in the winter.

Q. Well now, about to what extent would it fluctuate?

A. I should say that fifty per cent. would be a reasonable estimate.

Q. Fifty per cent. off in the winter time, you mean, Doctor?

A. Yes, sir, I should think so.

Q. To what extent, Mr. Ward, do children call for Coca-Cola?

A. I don't think I ever saw a child drink a glass of Coca-Cola.

Q. Please state whether or not from your observation or experience the drinking of Coca-Cola creates in the person who drinks it any craving or desire for increased consumption of Coca-Cola, or an increased number of glasses of Coca-Cola.

A. No, sir, I don't think it does.

Q. Do you drink it yourself?

A. Yes, sir.

Q. And about how frequently do you drink it?

A. Sometimes I drink three or four glasses a day, probably more, and then again probably I won't touch it for a week.

Q. Now, state whether or not there has ever been a case within your personal knowledge of anybody being injuriously affected by drinking Coca-Cola.

A. No, sir; there has not been.

Q. By what name is the drink ordered by people who call for it at the fountain?

A. Well now, that is a proposition — some people call it Coca-Cola, others come in and call for "Coke." There are a dozen slang phrases they use for it.

Q. State whether or not these slang phrases, such as "Coke," are recognized as the real name of the drink?

A. Well, it is now — that is, locally, I mean by that,— for instance, we have soda water boys around the counter and an intimate friend or friends of theirs will call for a flap-jack, anything turned, — you don't know what you mean by that, —well, it is meant by having the syrup in one glass and the water in the other and pouring it backward and forward.

Q. Then what does a person, I mean who is not addicted to slang, by what name will he indicate to the seller that he wishes this drink?

A. Call for Coca-Cola, I should say the better class of people call for Coca-Cola; because the word "Coke" is objectionable, and I always made it the rule in the store when we had waiting boys to come up and call for "Coke" to cut that right out, not allow the word to be used in the store.

CROSS EXAMINATION,
BY MR. MILLER:

Q. Now, they call for Coca-Cola under what names, taking the better class — what names do they use in calling for Coca-Cola?

A. The better class of people always say Coca-Cola. These boys will run into the store and say: "Give me a coke" — that is the most universally used slang phrase that I know of.

Q. Now, what other name is it called by?

A. Some of these intimate boys, their friends, they will say: "Flapjack turned,"—there are so many of those little things that I do not pay any attention to them because they don't have any significant meaning at all to the proprietor of a store.

Q. But "Flapjack turned" is a name that is applied to any other drink as well as Coca-Cola?

A. No, sir; simply an understanding between the boys.

Q. But that means any drink that is poured back and forth?

A. A flapjack, if they called for that, would have a

specific meaning, to call for a cold drink.

Q. But that would apply to one drink as well as to another?

A. I should imagine outside of that sphere — they would not call for a flapjack turned when they wanted a limeade, or a lemonade or a lemon phosphate ——

Q. I say, it might have application to any one of several drinks, whereas "Coke" when called for applies only to Coca-Cola?

A. Yes, sir, that is exactly right, when they call for "Coke" they mean Coca-Cola.

Q. And when they call for "Dope," they mean Coca-Cola?

A. I suppose they do.

Q. Now, aside from "Coke" and "Dope" and "Coca-Cola," what other names if any, are applied to Coca-Cola?

A. I couldn't tell you. It is not a part of my business to keep up with a lot of slang phrases.

Q. Now, what is your especial function in your place of business?

A. Do you mean occupation?

Q. Well, your particular department?

A. I am secretary and treasurer of the Hamner-Ballard Drug Company, and have general charge of the ethical drug department.

Q. Now, what do you mean by "Ethical drug department?"

A. I mean the legitimate drug business.

Q. Is the dispensing of soft drinks a part of the ethical drug department?

A. No, sir.

Q. Then you have only a limited supervision over the drug department?

A. No, sir.

Q. I mean, over the fountain and store?

A. The entire store outside of the clerical office work and buying.

Q. But in a general way your especial function is over the drug department?

A. No, not any more so than over the entire store.

Q. Then why do you say that you have especial supervision over the ethical drug department?

A. Because everything in the drug department is submitted to me; I am supposed to look after the drug business, but matters pertaining to other portions of that business come under my supervision also.

Q. But in a general way?

A. I have jurisdiction over the whole thing.

Q. But your supervision particularly over the drug department?

A. Yes, sir.

Q. And secondary or incidentally over the other dements?

A. Yes, sir.

Q. What connection have you had with this company for the last twelve years?

A. I have not been with it twelve years. We organized it about six years ago.

Q. How many gallons of Coca-Cola syrup do you buy, or did you buy last year?

A. I couldn't tell you exactly.

Q. Could you estimate it?

A. We have used as high as, I think, probably two thousand to twenty-five hundred gallons in one year.

Q. That means that there are 128 ounces to the gallon?

A. Yes, sir

Q. Do you dilute or mix that Coca-Cola syrup in any way before dispensing it at the fountain?

A. Not that I know of.

Q. How many serving boys do you have at the fountain?

A. We have two in the rear and two in the front, that makes four.

Q. What character of fountain do you use, what is known as the wall service or the counter service?

A. The counter service.

Q. Do you find any trouble with your pumps or levers in their working in dispensing Coca-Cola or other syrups?

A. No, sir.

Q. You do not have occasion to clean them because of the coagulation of this syrup on parts of the pump or fountain from which they are served?

A. No, sir.

Q. From your experience does the sugary substance in the Coca-Cola syrup clog the parts of the pump so as to emit a smaller portion as time progressed?

A. The crystallized sugar?

Q. Yes.

A. No, sir.

Q. Now, what is the method of service, how is it emitted the Coca-Cola, from the fountain or container into the glass?

A. By the pump, pressure of the pump.

Q. And that means to press with the thumb by the boy?

A. No, it is an upright pump.

Q. How does the boy operate it?

A. Simply presses the pump down, and as he lets it up the syrup flows — the vacuum is open, — made so by forcing or compressing the air out.

Q. And that is done with the thumb?

A. No, sir, couldn't use his thumb, not strong enough.

Q. What does he use?

A. The palm of the hand most of the time.

Q. Now, if a customer comes in and calls for a double-header, what is meant by that?

A. Never heard it called for.

Q. You have never heard that called for?

A. Yes, that is right; I never have heard it called for.

Q. Where is your place of business in the store?

A. 1315 South Main. Do you mean my place in the business, in the store?

Q. Yes.

A. Over the entire store.

Q. Then you supervise the entire store?

A. Yes, sir.

Q. How many employes in the store?

A. Well, if you mean those that are connected with the cafe department and all, we have in the neighborhood of about thirty.

Q. And you have general supervision over it all?

A. Yes, sir.

Q. You are a registered pharmacist?

A. Yes, sir.

Q. What is caffeine, is it a drug?

A. An alkaloid obtained from coffee.

Q. Is it a drug?

A. Yes, sir.

Q. Now, instead of being obtained from coffee, is the commercial caffeine obtained from tea?

A. You can get thein from tea but I think the principal source of our caffeine is from the coffee.

Q. Is there a difference between them, that is, a difference between the substance obtained from tea and that from coffee?

A. Alkaloids are a little different in chemical structure, but I think the physiological effects are about the same.

Q. Is commercial caffeine obtained from tea and from waste tea leaves?

A. I don't know. I don't think that is our authority for it.

Q. You don't think which?

A. That is our authority for it.

Q. Now, do you mean to testify that caffeine as it is

commercially bought and sold in the American market is obtained from coffee?

A. I mean to say this: There are a good many sources from which caffeine can be obtained that I possibly do not know.

Q. And you don't pretend to say what it comes from?

A. No, but I know it is an alkaloid that does exist in coffee.

Q. Do you know the constituents of the Coca-Cola syrup?

A. No, I do not.

Q. What effect has caffeine on the human system?

A. I think it is used as a heart stimulant to a certain extent; also as a diuretic.

Q. What is the effect of stimulating the heart on the human system?

A. It increases the flow or pressure of blood in the arteries.

Q. In other words, it makes it flow faster ——

A. (Interrupting.) Yes, sir —

Q. (Continuing.) — than usual, than it would usually flow?

A. Yes, sir.

Q. And don't you know that as a result of that the arterial structure is impaired when you increase the blood flow as against what nature designed?

A. Do you say I know — no, I do not.

Q. That is your opinion from a pharmaceutical standpoint?

A. Yes, that is my opinion from a pharmaceutical standpoint; from absolute knowledge I do not know.

Q. Now, you say that the average consumer of Coca-Cola probably takes three glasses per day, if I understand you correctly in your direct examination?

A. Yes, about that.

Q. What does the minimum cumsumer of Coca-Cola take?

A. Well, he could not take less than one glass.

Q. And what would the maximum consumer take?

A. I couldn't tell you, sir.

Q. How can you form a judgment as to that if you know the minimum but do not know the maximum?

A. Well, from the simple fact I see young men accustomed to coming in the store, probably coming in in the morning and again in the afternoon and again in the evening.

Q. And judging from the service at your counters, you say that the average consumer takes three glasses per day?

A. Yes, sir

Q. And the minimum consumer takes one?

A. Yes, sir. I do not see how he could take any less than one.

Q. How many pumps have you at either of your fountains?

A. I couldn't tell you now exactly that but I think operate probably eight pumps in the first section.

Q. And how many sections to the fountain?

A. Three, but we don't use all of those three sections.

Q. How many sections do you use?

A. I think possibly one full section there and probably three or four pumps in the other.

Q. Then you use about half of your pumps?

A. Yes, sir

Q. That is, at one fountain?

A. Yes, sir

Q. And how many do you use at the other fountain?

A. I think we have twelve pumps in our rear fountain and probably use them all.

Q. How many of those pumps at the front fountain are there from which Coca-Cola is dispensed?

A. Two, I think.

Q. And how many pumps at the rear fountain from which it is dispensed?

A. Well, I think two.

Q. And all of the other drinks are dispensed from the other fountains, I mean, from the remainder of the pumps?

A. Yes, sir

Q. Have you or your company stock in the Coca-Cola Company?

A. No, sir.

Q. Have you ever had?

A. No, sir.

Q. Has your company ever had any?

A. No, sir.

Q. Now, did the Mr. Robinson with whom you were associated have any?

A. No, sir; he did not.

Q. Or do you know?

A. No, sir, absolutely none.

Q. You are acquainted with Mr. Pidgeon who is present while this deposition is being given?

A. Yes, sir.

Q. What business or what position does he hold here in Memphis with reference to the Coca-Cola Company of Atlanta?

A. I never knew until a day or two ago; I understand

he is connected with the bottling of Coca-Cola here.

Q. He is the gentleman who arranged for you to come here and give your deposition this morning?

A. Yes, sir.

Q. Are you a licensed physician or a practicing physician?

A. No, sir.

Q. Well now, what quantity of this Coca-Cola syrup is emitted by one pressure of the pump?

A. These pumps are set, you know, they have a set screw on them, you can set them for any amount up to two or three ounces, but these pumps are set to draw one ounce of Coca-Cola.

Q. How many ounces do they draw sometimes, you don't know?

A. They could not exceed that much because we have to keep a lookout on them.

Q. But you don't know, of course, what the boys do?

A. No.

Q. When your back is turned?

A. No, could not, but these pumps are set for one ounce.

Q. What do you pay these serving boys?

A. The boys in the rear we pay forty dollars a month, ten dollars per week, and one man up front we pay eighty-five dollars a month, and I think another one we pay sixty dollars to.

Q. The lowest one you pay what?

A. Ten dollars per week.

Q. Ten dollars per week?

A. Yes, sir.

Q. Now, do you have day shifts and night shifts?

A. Well, yes, sir; they change.

Q. Do you drink Coca-Cola yourself?

A. Yes, I do.

Q. How long have you drank it?

A. I reckon I have drank it fifteen years.

Q. And is it palatable or not?

A. Yes, very palatable to me.

Q. Do you like it?

A. Yes, I like it; like carbonated beverages of any kind. I don't drink anything stronger than that but I like carbonated beverages of any kind.

Q. Any person who presents himself with the requisite price can get a glass of Coca-Cola?

A. Yes, sir.

Q. A child?

A. That would include children, but I don't think I

would permit a child to drink Coca-Cola in the store.

Q. And why not?

A. For the simple fact I would not like to have children hanging around the fountain with young men coming in there and hear a lot of talk in front of the fountain that I don't think is very good for children. We have two fountains in the store, one in the front is given up to the young men and nobody in the rear of our cafe where the ladies are served as a rule but ladies and ——

Q. (Interrupting.) Why would you not let a child drink Coca-Cola?

A. Why, I have just given you my reasons for that — you take some young men around fountains and around cigar counters use language not very acceptable to the ears of a child.

Q. You do not permit practices of that kind to be knowingly indulged in in your store?

A. Well, you can't help that — nothing discourteous is permitted, but the talk among young men you can't control, or I, either.

Q. But you said you would not allow a child to have a glass of Coca-Cola, now, why not?

A. No, sir; we have one in the rear that they may be served at.

Q. And they probably are served in the rear and you may not know it?

A. Well, I don't think they are because children do not call for it.

Q. But your statement is you would not permit a child to purchase it — now, why?

A. I do not know that I could state to you in any other way than I have, in the front part of our store, and in fact in the rear part of the store, children might be served back there, I don't know it.

Q. You would not permit it to be served in the front?

A. I would not permit young children — in fact, none of them stop up there for it, and we try to send the ladies and the children all to the rear where they belong.

Q. And as far as you know these young children are not served Coca-Cola in the front of the store?

A. No, sir.

Q. But, if I understand you, in the rear of the store it can be indiscriminately bought by children the same as other people?

A. I don't know that it could even then.

Q. Why not?

A. Well, it is just a habit I have got to serve children or of serving children; I don't think I ever saw a child

drink a glass of Coca-Cola in my house except my own child.

Q. Now, then, why is it you say you don't know that they could get it in the rear?

A. It may be from this fact, — coffee is stimulating, I don't think it advisable for children to drink coffee, and if Coca-Cola has got caffeine in it I should not think it would be advisable for children to drink a product that has caffeine in it.

Q. And you think that you would not serve a child Coca-Cola at the rear fountain?

A. I should advise against it; yes, sir.

Q. That is the substance that is popularly and generally known and dispensed as coca separate from coca — I ask you as a pharmacist.

A. You mean sold over the counter as a drug?

Q. Yes, coca.

A. It is generally the product of the bean —I think, I would not say positively.

Q. Is it not a product of the coca leaf?

A. Well, coca is proper coca, Erythroxylon Coca.

Q. That is the name by which it is called and written in the pharmacopoeia, is it not?

A. Yes, sir.

Q. As coca?

A. Yes, sir.

Q. By "Coca" as used in the pharmacopoeia and generally speaking, it has reference to the leaf?

A. Yes, sir; I think that is the heading of it.

Q. You think it has reference to the product or extract of the leaf?

A. I think coca itself would indicate the leaf or the herb.

Q. And that contains cocaine, does it not?

A. Yes, sir.

Q. Now then, what does kola mean as it is pharmaceutically and generally known and has been for years?

A. That comes from the cola nut.

Q. And its effect is what?

A. I think they get the stimulant effect of caffeine out of that.

Q. So that Coca-Cola, as it is styled by The Coca-Cola Company, — coca-cola — unites the two words as they are used in the pharmacopoeia and implies the active properties of the coca leaf and the cola nut?

A. No, I do not think it implies the active principles of it; I should think it implies, however, that the product was manufactured, however, from the cola nut and coca

leaf, but not the active principles of it.

Q. Why would it not mean the active principles, now?

A. Well now, would you simply say — take for instance, I will ask you this question — take morphine, would you imply that included all the alkaloids that are extracted from opium?

Q. I am not on the witness stand, but I am trying to get at your idea — I am simply asking you if coca as shown in the pharmacopoeia, as you say implies and gives one to understand that it is the product of the coca leaf or the coca leaf proper which contains cocaine?

A. Yes, sir.

Q. Then, by what process of reasoning do you arrive at the conclusion when you use the term "Coca," that the cocaine is to be eliminated —

A. (Interrupting.) I didn't say that at all; not my reference at all. When you make the product of the coca leaf you must take the tannic acid and everything else that is contained in the list — that is abstracted from the menstrum from which you —

Q. (Interrupting.) The chief active principle of or ingredient of the coca leaf is cocaine?

A. Yes, sir.

Q. And the chief active ingredient of the cola nut is caffeine?

A. Yes, sir.

Q. And they are both drugs?

A. Yes, sir.

Q. How, are these drugs, or either of them, speaking from your viewpoint as a pharmacist, recommended for food?

A. No, sir, not that I know of.

Q. But on the contrary, they are prescribed for physical ailments, are they not?

A. Yes, sir.

Q. And the normal healthy person does not require either?

A. Should not; no, sir.

Q. On the contrary, they would have a deleterious effect on the average normal person, would they?

A. I should think cocaine would most undoubtedly but as far as caffeine goes, I question it.

Q. If caffeine be prescribed for certain ailments, then how could you consistently say it could be favorably recommended to the normal healthy person?

A. I think we people get many things in medication that we use as foods.

Q. But you cannot say that caffeine serves any healthy

or beneficial purpose in case of a normal healthy person?

A. No, sir, I do not.

Q. Then if it does not serve a beneficial purpose, does it naturally result that it has a deleterious effect?

A. No, sir; I didn't say that.

Q. Then you think it is a neutral sort of a substance which does not have any beneficial effect at all?

A. No, sir.

Q. If it does not have any beneficial effect, what sort of an effect does it have?

Q. The point that I want to drive at, Mr. Miller, is in regard to caffeine — for instance, we live on, to a great extent, flour, farina tracter, which is flour; now, at the same time by a process, which I am not familiar with, they transfer a portion of that into gluten flour, which is one of the most helpful products I think that are given to diabetic patients. Well, now, therefore, we are transferring a food into a medicinal agent, or isn't that right? Or maybe I am wrong.

Q. That you say is given to diabetic patients.

A. Yes, sir.

Q. I understand you to say that caffeine was also prescribed for various ailments?

A. Yes, sir.

Q. My question presupposes that the person was in normal healthy condition?

A. Yes, sir.

Q. Now then, what function does caffeine serve that is beneficial?

A. I can't say that it serves anything that is beneficial.

Q. Then, if it does not serve a benificial purpose, does it naturally follow that its effect is deleterious?

A. From physiological or high standpoint of the medical profession, they may say it—I don't think that a glass of whiskey hurts some men, though it is not absolutely necessary, I don't think it injures them.

Q. Now, what you mean is that the effect of it is not observable?

A. Yes, sir, I don't think a small quantity of caffeine is any more deleterious than a cup of coffee.

Q. But, if continued, it might become deleterious?

A. Yes, sir, in the same way as coffee would; anybody who drinks coffee to excess would have some deleterious effect from it.

Q. That is true of any drug is it?

A. Yes, sir.

Q. You take a very infinitesimal quantity of cocaine, you can't observe that it has any deleterious effect, but you

accumulate and take it from day to day or from time to time, and it does have a deleterious effect?

A. Yes, sir.

Q. In other words, it has a deleterious tendency?

A. Caffeine you are refering to?

Q. Well, that or any other drugs.

A. Drugs, properly speaking, yes.

Q. And caffeine is a drug properly speaking?

A. Yes, sir; so put in the catagory.

Q. Now, you say that you probably would not serve children Coca-Cola. Between what ages do you refer when you speak of children?

A. Children four or five, or six or eight years old.

Q. And these fountain boys, what ages are they?

A. I think our front fountain man is probably 35 and the other one about 24 or 25.

Q. What are those you term as "fountain boys"?

A. That is what I had reference to.

Q. Do you mean to say that of all your servers there?

A. Yes, sir,we have only four; two white and two colored, and the two in the rear are grown men, I suppose twenty six or twenty seven years old.

Q. Where do your colored men serve?

A. In the rear.

Q. And that is where the ladies are served?

A. Yes, sir, a little cafe back there.

Q. And you have colored persons there who are dispensers of soft drinks?

A. Yes, sir.

RE EXAMINATION

BY MR. McALLISTER:

Q. Mr. Ward, I believe you stated that you were not a practicing physician?

A. No sir.

Q. Or a licensed physician?

A. No, sir.

Q. And your knowledge of the effect of drugs is gained purely from your knowledge of pharmacy?

A. Yes, sir.

Q. Mr. Ward, state whether or not rhubarb and ginger are classed as drugs.

A. Yes, sir.

Q. State whether or not the fact that an article is a drug necessarily implies that it is injurious.

A. Well, I should say simply that the word "drug" would mean that it pertained to something that was used for a cure, or some ailment or sickness.

Q. Now, state whether or not rhubarb and ginger are

injurious.

A. We would class rhubarb as a drug. When it comes to ginger, we would consider that more of a condiment, although I think it is put down as having medicinal properties, the use of it.

Q. What I am trying to get at is whether the use of the term "drug" necessarily implies that an article has a deleterious effect on the human system.

A. No, sir, not a deleterious effect by any means.

Q. State whether or not, Mr. Ward, eating a full or a heavy meal will increase the blood pressure.

A. Yes, sir.

Q. What is coca, Mr. Ward, C-o-c-a? (Spelling.)

A. My recollection is that the reference to "coca" in the dispensatory is only the description of the Erythroxylon Coca—the technical term of the shrub itself.

Q. The shrub itself?

A. Yes, sir.

Q. Is there or not a product known as coca? In other words, I understood you to mean or understood you to say just now that coca means coca plant. Is there or not any product known as coca?

A. Any product?

Q. Yes.

A. There are products made from the coca leaf.

Q. Do you not call them coca?

A. No, sir, we have distinguished them by their names, fluid extract, tincture, and I might say solid extract.

Q. Now, if a man came into your store, Mr. Ward, and asked for coca, what would you serve him, if anything?

A. I have been in business thirtyfive years, and have never sold a grain over the counter—

Q. (Interupting) You have no such product in the store?

A. Yes, sir, we have the leaf and have the fluid extract and all the products.

Q. State whether or not what you have in the store is known as coca or cocoa leaf?

A. Coca would be the techincal term for coca leaf.

Q. Are there other products derived from coca plant besides the leaves?

A. No, I think the medicinal properties reside naturally entirely in the leaves.

Q. And when you say coca you mean coca plant or coca leaves?

A. Yes, sir.

Q. Mr. Ward, when you say "Oak," what do you mean?

A. Well, I would think that it would apply to the oak

tree itself.

Q. Now, state whether or not the same thing applies to the word "coca," whether it applies to the plant itself.

A. To the plant itself.

Q. What is cola?

A. It is a plant or tree, I think it is more properly speaking, a tree.

Q. Is there or not any product on the market known by the simple name of "Cola" in the drug trade?

A. Not simply "Cola"—unless it applies to the tree from which the nut is taken.

Q. If a customer were to come into your store and ask for "Cola," would you know by that that he meant any particular single thing or that he wanted some particular part of the plant?

A. I would think that he wanted some product from the cola nut.

Q. Now, does the United States Pharmacopoeia, or not, recognize any article as a drug by the simple name of "Coca" or by the simple name of "Cola"?

A. The pharmacopoeia?

Q. Yes.

A. I don't know whether it is put down officially or not; I couldn't say.

Q. State whether or not, Mr. Ward, the Coca-Cola Company has ever within your knowledge advertised its product as "Dope" or as "Coke"?

A. No, sir, not that I know of.

Q. State whether or not the words "Dope" and "Coke" are recognized among the soda fountain trade and among the public generally as being the real name of the drink or as being a slang expression for it.

A. Why, a slang expression, of course.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Speaking from your experience as a registered pharmacist,—and I understand you are?

A. Yes, sir.

Q. Do you sell caffeine except on a physician's prescription?

A. I don't think I ever saw it sold, Mr. Miller, except in physicians' prescriptions.

Q. And speaking from the standpoint of a pharmacist, you would not say that it should be sold with a view to promoting public health except on a physician's prescription, would you?

A. If a man should call for caffeine I don't think I

would have any hesitancy in selling it.

Q. And before the law prohibited the sale of cocaine-before that law went into effect, you sold cocaine without a physicians prescrition?

A. I never sold a grain of cocaine in my life except on a physician's prescription, or for dental purposes.

Q. You were not in business prior to the time that the present law went into effect, the State law?

A. The Pure Food and Drug Act?

Q. No, I am speaking as to the pharmacy law of the State.

A. Was I in the business?

Q. Yes.

A. A good many years.

Q. You never had any calls for cocaine?

A. Well, I may have had calls for it.

Q. But you didn't sell it?

A. No, sir.

Q. You required a prescription of a physician?

A. Yes, sir.

Q. And you don't recall ever having sold caffeine except on the prescription of a physician?

A. No, sir.

Q. Unless you sell it in Coca-Cola?

A. If it is in Coca-Cola; I couldn't say it is in Coca-Cola.

RE-EXAMINATION

BY MR. McALLISTER:

Q. Mr. Ward, assuming that an ounce of Coca-Cola syrup contains approximately 1.24 grains of caffeine, would there be any difference between the physiological action of the caffeine in an ounce of Coca-Cola syrup and that in a cup of coffee, as ordinarily drank and served?

A. What was the proposition?

Q. One and twenty-four hundredths grains of caffeine to an ounce of Coca-Cola syrup?

A. Well, I understand that. You say, would there be any difference?

Q. Yes, would there be any difference between the physiological effect of that amount of caffeine in a glass of Coca-Cola—I mean the physiological action, and the physiological action of the quantity of caffeine, ordinarily I mean, contained in a cup of coffee, as ordinarily drank?

A. Well, I don't know the amount that is contained in a cup of coffee.

Q. I will put the question in the alternative, then. Assuming that caffeine exists in Coca-Cola syrup, would there be any difference, physiologically, between the action of

caffeine as it exists in Coca-Cola syrup and as it exists in coffee?

A. In the same proportion?

Q. Yes.

A. I should judge not.

Q. I beg your pardon, I didn't get your answer.

A. I should judge not.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. You do not mean to put caffeine and ginger in the same class as drugs?

A. Caffeine and ginger?

Q. Yes.

A. We class one of those as a condiment.

Q. And the other as a drug?

A. Yes, sir.

Mr. Candler: I will now read the deposition of

J. R. TAGUE,

the next witness called, of lawful age, first duly sworn, deposed as follows:

DIRECT EXAMINATION
BY MR. McALLISTER:

Q. Where do you live, Mr. Tague?

A. In Memphis, Tennessee.

Q. What business are you in?

A. The jobbing drug business.

Q. Over what territory does your house do business?

A. Well, we do business in Florida and Texas—a long ways from here.

Q. And the intervening states, you mean?

A. Yes, sir.

Q. How far west from Memphis does your house job?

A. Well, to the farther end of Oklahoma.

Q. Mr. Tague, state whether in connection with your drug jobbing business you handle any soda fountain syrups.

A. Yes, sir, we handle a great many different kinds.

Q. Name some of the principal ones, please.

A. The principal one is Coca-Cola.

Q. How long has your house jobbed Coca-Cola?

A. Oh, twenty years or more; that is the Mansfield Drug Company, that is, the Mansfield Drug Company I was with when I first came here twenty-five years ago, but twelve or thirteen years ago that company consolidated with the present concern, and the two concerns together have been jobbing Coca-Cola for twenty years.

Q. How long have you been familiar with the syrup known as Coca-Cola?

A. Well, sir, more than twenty years.

Q. How long has it been on the market, if you know?

A. I couldn't say.

Q. Mr. Tague, please state whether or not in your knowledge there has ever been any other syrup or any soft drink or beverage or food product placed on the market under the name of Coca-Cola other than that manufactured by the Coca-Cola Company of Atlanta, Georgia.

A. No, sir.

Q. Probably I should have prefaced that by asking you, where and by whom is this syrup known as Coca-Cola made?

A. By the Coca-Cola people, of Atlanta, Georgia, it has always been understood.

Q. From whom do you get the syrup that you job?

A. We get ours now from a warehouse in the city where they have it stored.

Q. Whose warehouse?

A. They bill it to us from Atlanta.

Q. To what extent, Mr. Tague, during your knowledge of the drink of Coca-Cola, has the drink been advertised?

A. Oh, enormously.

Q. State if you know, by whom this advertising is done.

A. I couldn't say by whom it is done, only that it is done by the Coca-Cola people; I don't know through what agency.

Q. Now, do you mean by that the manufacturers of the drink, or by the people that handle it?

A. The manufacturers of the drink.

Q. Now, what you have testified to in regard to the manner in which the drink is put on the market, the name under which it is put on the market, I will ask you if the same thing prevails over all the territory through which your house jobs the syrup.

A. Will you ask that again please?

Q. You have testified, Mr. Tague, that the drink is known as Coca-Cola; that it has been on the market to your knowledge for twenty years or more, and that there has never been any other drink or food, beverage of any kind, or food product on the Market under the name of Coca-Cola other than that manufactured by the Coca-Cola Company of Atlanta, Georgia.

A. Yes, sir.

Q. Now, is that or not true of all the territory over which your house does business?

A. Yes, sir.

Q. Are you or not familiar with the retail business in soda fountain drinks?

A. Fairly so; yes, sir. We handle a line of soda fountains, and of course handling that kind of stuff necessarily we know more or less about it.

Q. Now, how is the drink known as Coca-Cola ordinarily served to the customer at the fountain, Mr. Tague?

A. In seven-ounce glasses.

Q. I don't mean how much. I mean how is it fixed up for the customer.

A. Well, they have,—as a rule, I believe that they do not sell any more in one glass than in another; the glass has a small band or mark around which indicates the amount of Coca-Cola to be turned into the glass before the carbonated water is drawn, and that is in proportion of one to six, making a seven ounceglass.

Q. One to six what?

A. One ounce of Coca-Cola syrup to six ounces of carbonated water.

Q. Are you able to say, Mr. Tague, to what extent children are in the habit of drinking Coca-Cola?

A. No, sir.

Q. Mr. Tague, state whether or not your sales of Coca-Cola syrup vary with the seasons of the year.

A. Oh, yes, we sell more in warm weather, of course.

Q. To what extent do they fluctuate?

A. Well, I presume we will sell—oh, sixty per cent, of all our sales during the months of, say June, July and August..

Q. Do you drink Coca-Cola, Mr. Tague?

A. Not in cool weather; I always do in hot weather.

Q. I will ask you to state what your observation has been as to whether or not—I mean, what your experience or observation has been as to whether or not the drink Coca-Cola creates on the part of the person who drinks it a craving or desire for increased quantities of Coca-Cola or increased number of glasses of the drink.

A. Well, I could only say from my own experience; I do not find that anything of that kind prevails at all with me.

Q. Have you observed anything of the sort with others?

A. No, sir.

Q. I will then ask you as to your own experience, as to what your own experience has been in that respect.

A. My experience is that it produces nothing of the kind; I drink it because it seems satisfying, seems to strike the right spot, there seems to be more body to it than to ordinary syrups.

Q. Mr. Tague, state whether or not there has ever been to your knowledge, within your personal knowledge, I mean, anybody injuriously effected by drinking Coca-Cola?

A. No, sir.

CROSS-EXAMINATION
BY MR. MILLER:

Q. You mean what by "body" to the drink, Mr. Tague? What is body?

A. Sir.

Q. What is the effect?

A. Oh, I don't know that there is any particular effect to it at all, only in the summer time I say that I want some cooling drink, and it seems to strike the spot better. The other syrups, there is not very much to, don't you know, the syrups they draw from the fountain, as a rule vanilla syrup, strawberry syrup and pineapple syrup and that kind of stuff,—you take acid phosphate, there is not much to it; Coca-Cola has a very nice taste and leaves a very pleasant farewell; it produces an effect that perhaps these other drinks I mentioned do not.

Q. What I want to know is that effect that it produces that the other drinks do not produce?

A. Well, I couldn't say what effect it has only I like it, very cooling and lasting in effect.

Q. Is it any more cooling than the ordinary ice water?

A. Yes, sir, it feels so to me.

Q. Colder than ice water?

A. It feels so.

Q. Now, don't you know as a matter of fact if it is liquid at all it would not be any colder than ice water?

A. I presume that is the case, sir.

Q. But it has an effect different from any other soft drinks that you can't describe?

A. Yes, sir.

Q. And that effect is a sort of stimulating effect is it?

A. I presume so, yes, or at least I think so, I have always understood it was a stimulating drink.

Q. And that has been your experience with it?

A. Yes, sir.

Q. In other words, if you were tired and took that drink, shortly after taking it the tired feeling would disappear, apparently?

A. Yes, and more or less always.

Q. You feel like a comparatively new man?

A. Well, feel relieved.

Q. Of that tired feeling?

A. Yes, sir.

Q. You feel invigorated to a certain extent?

A. Yes, sir, to a certain extent.

Q. Have you had occasion to observe the extent to which it is consumed at the fountains here in Memphis?

A. No, sir, only through sales of it to the local people.

Q. Now, you say that you sell much more of it than you do of the other syrups?

A. Yes, sir.

Q. How many drinks have you been acccutomed to taking, you and your friends, during the day, so far as you have observed?

A. I may have drunk three glasses in a day but as a rule one or two glasses, not more than that.

Q. You are a pharmacist?

A. No, sir; I have been in the retail drug business for six or seven years; I never have studied pharmacy, never graduated in any school.

Q. You know as a matter of fact that caffeine is a drug do you?

A. Yes, sir.

Q. And you know that it has a stimulating effect?

A. Yes, sir.

Q. And you know that ordinarily it is not dispensed except under a prescription, I mean, under the direction of or on the prescription of a physician?

A. Well, I get it in a cup of coffee each day, I know, or in a cup of tea.

Q. I am speaking of commercial caffeine.

A. Well, I suppose commercial caffeine is in coffee and tea.

Q. Now, do you as a druggist or as the representative of your firm state that that caffeine that is found in coffee and tea is what is known as and bought and sold on the market as commercial caffeine?

A. I have always understood that it was.

Q. Now, don't you know that the commercial caffeine comes in a drum and that when you buy that you dont get coffee at all?

A. I mean to say that caffeine was the principal of coffee.

Q. I am speaking of the commercial caffeine as bought and sold, isn't that wholly seperate and apart from the other substances that go to make up tea and coffee.

A. Isn't it what?

Q. Isn't commercial caffeine only one of the ingredients that is found in tea and coffee?

A. Yes, sir.

Q. And when you buy and sell caffeine you do not ex-

pect to get tea or coffee, either, do you?

A. No, sir.

Q. Now then, I will ask you when you were in the retail drug business, or now in the wholesale drug business if caffeine is dispensed by the retailer promiscuously or indiscriminately to whoever wants it, or whether or not it is usually dispensed under the direction and on the prescription of a physician.

A. Yes, sir, I should think that was right.

Q. That is to say, it is prescribed by physicians and dispensed under the supervision of or by the direction of physicians?

A. Yes, sir.

Q. Your firm, or corporation, I believe it is, has it had any trouble with the Bureau at Washington under the Food and Drug Act? Has it been cited for a violation of that in any way?

A. Yes, sir.

Q. In what connection?

A. In misbranding of cartons.

Q. What is that, what is the nature of it?

A. Well, they called our attention to a number of different preperations that they claimed the printing matter was deceptive in or on.

Q. What is this carton you speak of, what character of substance is that?

A. It is pasteboard, the container the bottle is put in, to make it saleable and shapely.

Q. How long have you been doing business with the Coca-Cola Company of Atlanta, Georgia?

A. The two firms I have been with for twenty years.

Q. Was it or not a part of the method or scheme of advertising of the Coca-Cola Company at any pediod of its history to either give away or sell stock in the Coca-Cola Company of Atlanta in small shares?

A. Not that I know of.

Q. You don't know of any being held or ever having been held in Memphis?

A. No sir.

Q. Now, in this matter of advertising that you spoke of, does the dealer, retailer of jobber bear any portion of the expense of that or is that borne by the Coca-Cola Company in Atlanta, Georgia, exclusively?

A. It must be borne by them entirely; we have nothing to do with that.

Q. But you don't know how it is with the retail trade?

A. No, sir.

Q. Coca spelled (spelling) c-o-c-a, is a drug is it?

A. Yes, sir, well yes sir—is part of the name of coca leaves.

Q. And when "coca" is spoken of you understand that means coca leaf of which or in which cocaine is the chief or active ingredient, don't you?

A. No, sir, you wouldn't conclude that at all.

Q. What would you understand the word "coca" to mean?

A. Well, if it was spelled out like that I would understand it was coca erythroxlyn, which is coca leaf, but if anyone was to ask for "coca" I would suppose they meant "cocoa" which is made from chocolate.

Q. That is the ordinary breakfast drink?

A. Yes, we sell a great deal of it.

Q. And that is spelled (spelling) c-o-c-o-a is it?

A. Yes sir, that is spelled c-o-c-o-a but a great many people don't know how cocoa is spelled or cola—pardon me, but as an illustration of that, not more than two weeks ago one of our pricers, a lady, said "I have just lost a nickel" and I said "how is that" and she said "one of the gentlemen in the office bet me a nickel I could not spell "Coca or Cola", and she said I spelled it coca, and she then asked a young man who sat by the side of me if he knew how to spell Coca or Cola, and he said "yes, coca", and she said "you would have lost just as I did", and she later recovered the nickel through some other bet along the same line with somebody else she had bet with in the office, so the three of them spelled the word coca.

Q. They evidently had not studied the advertisements of Coca-Cola very much?

A. No, sir.

Q. And if they had they would have known how the name was spelled better than that?

A. Yes, sir, I should think so. To think of these people who are pricing Coca-Cola all day long it is suprising they did not know how it was spelled but that is the case.

Q. So it is the breakfast cocoa, spelled (spelling) c-o-c-o-a is a harmless beverage that is taken for family consumption?

A. It is not always spelled (spelling) c-o-c-o-a; the people that put it up call it coco—

Q. At any rate it is not spelled "coca"?

A. No sir.

Q. But the word "coca" is a drug and a drug term and the chief property or constituent of it is cocaine?

A. Yes, sir.

Q. And that is what is known as a drug to the trade?

A. Yes, sir.

Q. And is so known to the drug trade?

A. Yes, sir.

Q. Now then, you know also what the substance cola is?

A. Why I am not very familiar with it, no sir.

Q. As a dealer in drugs don't you know that there is such a substance as cola?

A. Yes, but we don't handle it, and never did.

Q. You know though that there is such a substance?

A. Yes, sir.

Q. Have you had occasion enough to be around soda fountains to know that coca-cola as it is dispensed in this section is very frequently termed "dope"?

A. I have heard it called "dope", yes, sir.

Q. And sometimes heard it called "coke"?

A. Yes, sir.

Q. And you have also heard cocaine termed "coke", have you?

A. Yes, sir.

Q. And other strong drugs of that character are sometimes called "dope", are they?

A. Yes, sir.

Q. How long have you known of "coca", that is (spelling) c-o-c-o-a and cola also, those two drugs?

A. Well, I should say for fifteen years, the former; and perhaps ten or twelve years the latter.

Q. That is about as long as you have been very familiar with the drug business?

A. No, sir, I have been fairly familiar with the drug business for much longer time than that.

Q. Didn't you know during your previous connection with the drug business or drug trade what cocaine came from?

A. Cocaine was not used to any extent no longer than 15 or 16 years ago I believe a comparatively new thing then.

Q. And it is only since cocaine commenced being bought and sold commercially that you have been acquainted with it, and that has been only about 15 years?

A. Yes, sir.

The Court: All the question about cocaine in these depositions and its effects, are excluded.

Mr. Sizer: Now, we have a similar series of depositions taken in Nashville and Memphis. After getting through Memphis, we made a certain stipulation that that testimony would be typical of testimony, we had taken in Chicago, St. Louis, Louisville, New Orleans, Birmingham——

Mr. Miller: Not New Orleans.

Mr. Sizer: No, not New Orleans. And I am satisfied that the other side, we will just consider the Knoxville deposition typical of the others taken in Nashville and Memphis and not read them.

Mr. Miller: We will consider them all as read. The only thing about that is this: it may result in the rebuttal testimony being reached today, and we may not be prepared to go into it this evening.

The Court: It is agreed that the depositions are of the same general character as those that have been read from Knoxville, and either side may read any part of them to show any especial difference. Gentlemen of the jury, instead of reading those depositions from Nashville and Memphis, it is admitted that they are of the same general character.

Mr. Candler: I will now read the stipulation.

(Stipulation No. 1 was read as follows):

"Memphis, Tennessee,
November 11, 1910.

On this day stipulation of counsel has been entered into with respect to the taking of depositions of certain persons residing in various cities of the United States, including Chicago, Illinois, the effect whereof is to afford to the claimant, the Coca-Cola Company, the benefit of the testimony of certain witnesses whose residences are set forth in said stipulation without actually taking the depositions of such witnesses. Now, said stipulation is to be in full force and effect unconditionally, as to all the witnesses named therein, except those resident in Chicago, Illinois, and is to be and remain in full force and effect as to those in Chicago also, but, upon condition that in case the Government should take depositions by consent of parties in this controversy in Chicago, Illinois, prior to the trial, that it may have the opportunity of cross-examining any of the witnesses above named for the Claimant on that occasion whose attendance can be procured, and such cross-examination may be read on the trial in lieu of the cross-examination stipulated for in the agreement aforesaid.

Signed at Memphis, Tennessee, on this 11th day of November, 1910.

J. B. COX,
Attorney for the United States.
PRITCHARD & SIZER,
CANDLER, THOMSON & HIRSCH,
Attorney for Claimant, Coca-Cola Co.
W. B. MILLER, Special Counsel.
Filed March 22-11.
R. M. WATKINS, D. C."

The Court: Gentlemen of the jury, you have heard the stipulation, and that means that those witnesses would testify substantially as the others you have heard read.

Mr. Candler: I will read this other stipulation.

(Stipulation No. 2 was read as follows:

"In this controversy, the Claimant, Coca-Cola Company, has taken the depositions of seven Retail Druggists, one Wholesale Dealer or Jobber, and two Consumers of Coca-Cola, residing in Knoxville, Nashville, and Memphis, Tennessee, all told, and has proposed to take the depositions of witnesses whose names, places of residence and business are as follows, to-wit:

RETAIL DRUGGISTS.

J. Schrodt, Dallas, Texas.
Russell V. Rogers, Dallas, Texas.
J. T. Berry, Dallas, Texas.
J. W. Covey, Fort Worth, Texas.
W. L. Terrell, Fort Worth, Texas.
W. M. Federmann, Kansas City, Mo.
Hugo Brecklein, Kansas City, Mo.
C. E. Zinn, Kansas City, Mo.
S. B. Sidmore, Chicago, Illinois.
Albert A. Wert, Chicago, Illinois.
J. S. Peacock, Philadelphia, Pa.
N. Pennypacker, Philadelphia, Pa.
Roy Childrey, Richmond, Virginia.
W. B. Elam, Richmond, Virginia.

WHOLESALE DRUGGISTS OR JOBBERS.

L. M. Moyer, Dallas, Texas.
J. W. Shugart, Fort Worth, Texas.
H. W. Williams, Jr., Fort Worth, Texas.
J. B. Love, Kansas City, Mo.
R. J. McQueen, Kansas City, Mo.
O. P. Meyer, St. Louis, Mo.
S. P. Delano, Chicago, Illinois.
C. F. Shoemaker, Philadelphia, Pa.
E. D. Taylor, Richmond, Virginia.

CONSUMERS OF COCA-COLA.

Geo. E. Williams, Dallas, Texas.
E. E. Marvin, Dallas, Texas.
V. Browne, Fort Worth, Texas.
E. H. Lightner, Kansas City, Mo.
P. B. Deane, St. Louis, Missouri.
Ezra S. Webster, Chicago, Illinois.
E. D. Southgate, Chicago, Illinois.

E. I. Santee, Philadelphia, Pa.
Hansford Wilkinson, Philadelphia, Pa.

For the purpose of saving expenses and time it is now stipulated and agreed between the parties to this controversy, namely, the Government on the one side and the Claimant on the other, that the proposed witnesses who are Retail Druggists, as set forth above, would testify in the order named, both on original and cross-examination, substantially as the seven retail druggists whose depositions have been previously taken, which is to say that the first of the proposed witnesses who is a retail druggist would testify as the first retail druggist who testified herein, and the second one likewise unto the second whose deposition was taken herein, and so on until seven of the proposed witnesses have been exhausted, after which the next seven of the proposed witnesses would in like manner testify as shown above and that the fifteenth witness would testify substantially like the first witness whose deposition was taken herein; and that as to the nine wholesale dealers or jobbers whose depositions are proposed to be taken, they would testify in substance on original and cross-examination as the one whose deposition has already been taken; and that the eight persons who are consumers of Coca-Cola, and whose depositions are proposed to be taken by claimant would testify four of them in substance as one of the two consumers of Coca-Cola whose deposition has heretofore been taken; and the other four as to the other whose deposition has heretofore been taken; and this stipulation may be read on the trial with the same force and effect as if such depositions had been actually taken, subscribed and sworn to.

The Claimant, Coca-Cola Company, also contemplated taking the depositions of certain persons whose names, places of residence and occupation are as follows:

SODA FOUNTAIN DISPENSERS.

J. B. Compton, Dallas, Texas.
T. M. Williams, Kansas City, Mo.
W. R. Arrant, St. Louis, Mo.
C. S. Coleman, St. Louis, Mo.
J. P. Samson, Chicago, Illinois.
Geo. W. Cummins, Richmond, Virginia.

And in lieu of taking their depositions, in so much as Claimant proposes to introduce on the trial the testimony of certain persons engaged in like business, it is now agreed that the depositions of the six persons last above named, both on examination in chief and on cross-examination, would be substantially the same as that of the witness or

witnesses of a like occupation whose evidence will be taken on the trial of this case; and this stipulation may be read on the trial as having the same force and effect as if such depositions had been actually taken, subscribed and sworn to.

This stipulation reserves to both parties the right to except to any incompetent and irrelevant testimony.

Signed at Memphis, Tennessee, on this November 11th, 1910.

J. B. COX,
Attorney for the United States.
PRITCHARD & SIZER,
CANDLER, THOMSON & HIRSCH,
Attorney for Claimant, Coca-Cola Company.
W. B. MILLER, Special Counsel.
Filed March 22, 11.
R. M. WATKINS, D. C."

Mr. Candler: They didn't do that so that there is really no cross-examination.

(Whereupon at 12 o'clock noon, a recess was taken until 12:20 o'clock P. M.)

AFTER RECESS:

The Court met pursuant to adjournment.

E. C. BROWN,
recalled to the stand, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. You heard Mr. Walker's testimony this morning?

A. Yes, sir.

Q. Can you tell us why it is that Coca-Cola tastes different at different places?

A. I think because the different soda, the carbonated water is under different pressure. Some places it is run out to 100 to 110 pounds. At our place, it run under a pressure of 180 pounds. In a good many places, particularly up in New York where I was the other day, they drew a glass, say pour it out this way ——

Mr. Miller: Anything that occurred the other day is not competent. The matter about which he is testifying may be relevant otherwise, but I submit it is not competent to inquire about conditions the other day in New York. This controversy arose over two years ago.

The Court: Limit your answer to conditions that within your own knowledge existed in 1909.

The Witness: Carbonic acid gas water is run out at

some places under 110 pound pressure and at other places at 180. That higher pressure makes the carbonated water snap; it makes it more palatable and it foams more. A great many dispensers will pour it out from glass to glass and that eliminates the carbonic acid gas and makes it flat, and where it is stirred with a spoon, it gives it a more effervescent condition and makes it more palatable.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. Do you live in Atlanta?
A. Yes, sir.
Q. Do you know Asa G. Candler, the President of the Coca-Cola Company?
A. Yes, sir.
Q. He is living?
A. The last time I knew anything of him he was.
Q. He is not here?
A. No, sir.
Q. You don't see him in attendance on the trial?
A. No, sir.
Mr. Sizer: I don't see that that is relevant.
The Court: It may be relevant, I cannot tell.

BY MR. MILLER:

Q. Is he in attendance on the trial?
A. The old gentleman?
Q. The President of the Company.
A. I don't see him.
(Witness excused.)

FRED SHEPHERD,
the next witness called on behalf of the claimant and intervenor, the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Did you last summer select a number of subjects to be examined by Doctor Brown, Doctor Wert and Doctor Holtzclaw in this Coca-Cola matter?
A. Yes, sir.
Q. Do you remember or not how many of those 100 people you selected?
A. I think all there were, about 110, and I suppose of that number I got about 75 or 80 of them. The rest of them were gentlemen that Mr. Thomas had sent up there.
Q. Now, in making the selection of those subjects, what

instructions were given you and what was the rule you followed?

Mr. Miller: I object to his instructions. He can state what he did, but I object to any of his instructions.

The Court: The exception is overruled.

The Witness: I tried to get men in all walks of life who drank Coca-Cola. I would not take anybody unless they told me they drank three or four Coca-Colas a day. I got men from the saloon bum up to the best business men in Chattanooga who took that examination.

Q. Did you or not try to find those who took the largest amount of Coca-Cola?

A. Yes, sir; that was my idea in going after the men.

Q. Are you a brother to T. P. Shepherd?

A. Yes, sir.

Q. Were you with him at the time the bottling works was being conducted in Texas?

A. Yes, sir.

Q. Did you drink a good deal of Coca-Cola during that time?

A. I drank from twelve to fifteen bottles a day. It was right in the plant and easily gotten to.

Q. What effect did it have on you?

A. Absolutely no effect on me that I could ever detect.

Q. Do you drink Coca-Cola now?

A. I drink I suppose five glasses a day on an average?

Q. Does it have any effect on you now?

A. None that I can see.

Q. Do you drink the same amount?

A. Oh, I might vary one or two, I don't keep track of it. When I get thirsty, I go in and get one.

Q. Do you drink as much in the winter as in the summer?

A. Yes, in fact more.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What year was it you were in Texas?

A. I don't really know.

Q. About how many years ago?

A. It must have been five or six or seven — about six.

Q. These men that you got, from the saloon bum up, to go and be examined, you were paid fifty cents a head and you gave them twenty-five cents a head of the fifty?

A. Yes, sir.

Q. That is the way you did it for the three Doctors who conducted the examination?

A. I was not working for the Doctors.

Q. They were the three doctors you sent the men up to?
A. Yes, sir.
Q. Well, who was it that paid you the fifty cents?
A. I was employed by Mr. Thomas.
Q. He is connected with the Coca-Cola Company?
A. Yes, sir.

BY MR. SIZER:

Q. Were you out in Texas one or two years?
A. I was there part of two years.
(Witness excused.)

E. E. KERR,

the next witness called on behalf of the claimant and intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. You are a practicing physician in Chattanooga?
A. Yes, sir.
Q. Of how many years standing?
A. Since November, 1887.
Q. Do you know the beverage Coca-Cola, Doctor?
A. Yes, sir.
Q. Have you had occasion among your patients and clients to meet people who drank it in considerable quantities?
A. Yes, sir.
Q. Have you ever known, Doctor, of any case of sickness or disease or ailment of any kind resulting from the use of Coca-Cola?
A. No, sir.
Q. Do you know or have you observed whether children drink it usually?
A. As a rule, not. In fact, I can't recall a child taking it from the fountain.
Q. Have you taken it frequently.
A. Yes, sir.
Q. How much of it do you drink?
A. Not much. Sometimes I will drink two or three bottles a day and maybe it will be a week or two when I don't drink any. It is owing to how often I want a carbonated water drink, and I like the bitter taste of the Coca-Cola.
Q. Does it have any effect on you?
A. No, sir.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. What is the physiological action of caffeine now, Doctor?

A. Stimulant.

Q. Of the heart, brain and nerves and muscles, is it?

A. We use it, Mr. Miller, that is the use of it is when I prescribe it as a stimulant to the respiratory center.

Q. By that you mean what?

A. The respiratory center.

Q. Make your answer a little more definite in that than respiratory center.

A. That is as definite as I can make it, unless I want to locate the beginning of the vagus nerve that furnished the lungs.

Q. What else do you prescribe it for?

A. Only as a stimulant.

(Witness excused.)

THEODORE LASSLEY,

the next witness called on behalf of the claimant and intervenor, The Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Mr. Lassley, do you live in Chattanooga?

A. Yes, sir.

Q. What is your occupation?

A. Manufacturer.

Q. Of what particular line of manufacture?

A. Vitrified brick, particularly.

Q. And what is your connection with the company?

A. I am vice-president.

Q. Of what company?

A. The Southern Clay Manufacturing Company.

Q. Mr. Lassley, were you examined last summer by Doctors Brown, Wert and Holtzclaw in connection with this Coca-Cola matter?

A. I was.

Q. Were you asked a number of questions by them in the course of that examination?

A. Yes, sir.

Q. Did you make a truthful answer to those questions?

A. Yes, sir; I did.

Q. Do you drink Coca-Cola, Mr. Lassley?

A. I do.

Q. To what extent?

A. Well, irregularly.

Q. What is approximately the largest amount you drink in the course of a day.

A. About four glasses.

Q. Do you drink that on some days and then there are some days you don't drink any?

A. Yes, sir.

Q. And what are the effects of Coca-Cola on you?

A. Well, it has somewhat of a stimulating effect.

Q. Have you observed any other effects aside from stimulation?

A. No.

Q. Do you drink more in the hot weather than you do in the cold weather?

A. Sometimes I don't drink any to speak of in cold weather.

Q. What is the general condition of your health?

A. Very good.

Q. How long have you taken Coca-Cola?

A. Six or seven years I should say.

Q. Has it any tendency to create a habit or craving with you?

A. Not with me.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. You do not profess to have any knowledge of medicine, do you, Mr. Lassley?

A. No, sir.

(Witness excused.)

McKINLEY HAYES,
the next witness called on behalf of the Coca-Cola Company, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your age?

A. 20.

Q. Were you examined last summer by Doctors Brown, Wert and Holtzclaw?

A. Yes, sir.

Q. Did they ask you a good many questions about certain things?

A. Yes, sir.

Q. Did you tell them the truth about it?

A. Yes, sir.

Q. Do you drink Coca-Cola?

A. Yes, sir.
Q. How much?
A. About anywhere from three to six a day.
Q. Three to six glasses a day?
A. Yes, sir.
Q. How long have you been drinking it?
A. About some five or six years.
Q. What if any effect does it have on you?
A. Well, it seems to be refreshing, that is all I can see.
Q. Is that about the only effect it has on you?
A. Yes, sir.
Q. Do you drink more some days than others?
A. Yes, sir.
Q. Do you drink more in the summer than in the winter?
A. Yes, sir.
Mr. Miller: I object to the leading questions.
The Court: Yes, the exception is sustained and the last two answers are excluded.

BY MR. SIZER:

Q. Do you drink the same all seasons of the year, and if not, in what seasons do you drink the most?
A. I have never paid any attention, but I think I drink more in the summer time than any other time of the year.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. It seems to refresh you, you say — that means it stimulates you?
A. Yes, sir.
Q. And braces you up?
A. Yes, sir.
Q. That is right?
A. Yes, sir.
(Witness excused.)

Mr. Sizer: We have a large number of other witnesses along that same line. We do not care to go into it any more extensively than your Honor thinks proper.
Mr. Miller: Well, I have not offered any objections to it, if your Honor please, I have not offered any objection, if your Honor please.
The Court: If you want to, you may put on two or three more. I will limit that to three more.

J. E. NEVILLE,

the next witness called on behalf of the Coca-Cola Com-

pany, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. How old are you?
A. Born in 1829.
Q. What is your business?
A. Loafing.
Q. Have you been working, Mr. Neville, or loafing all your life?
A. Yes, sir; I have worked.
Q. What work have you done?
A. All work that has been done by the human family, all mankind.
Q. Mr. Neville, do you drink tea or coffee or Coca-Cola?
A. Yes, sir.
Q. Do you drink all of them?
A. Yes, sir.
Q. About how much do you drink a day?
A. Well, I usually drink from one to two cups of coffee for breakfast and for dinner and sometimes for supper.
Q. How much tea do you drink?
A. About the same when I drink tea.
Q. How much Coca-Cola do you drink?
A. When I drink that, I drink a glass usually and sometimes — not one right after the other, I am not a glutton on anything. I drink one or two or three a day sometimes, and sometimes I don't drink it for some time, and then I drink it when I feel like it.
Q. What effect, if any, does it have on you?
A. I don't know that it has any effect, only that I like the taste of it.
Q. Does it have any tendency to create a habit or craving with you?
A. No, sir, none at all.
Q. Did you say how long you had been drinking it?
A. About 20 years.
Mr. Sizer: That is all.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. You say coffee has no effect on you?
A. No, sir.
Q. And tea has none?
A. No, sir.
Q. And Coca-Cola none?
A. No, sir.

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Q. You never tried any wire nails or anything like that?
A. No, sir.
Q. Well, stand aside.
A. I never tried anything else.

(Witness excused.)

ZACK H. TAYLOR,
the next witness called on behalf of the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your age?
A. Twenty-three.
Q. Were you examined by Doctors Brown, Wert and Holtzclaw last summer?
A. Yes, sir.
Q. Did you answer the questions they asked you truly?
A. Yes, sir.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How much?
A. Average about two a day.
Q. How long have you been drinking it?
A. Five or six years.
Q. Do you sometimes drink more than that?
A. Sometimes as many as four or five.
Q. Do you sometimes drink less than two?
A. Hardly ever less than two.
Q. You have been keeping that up for four or five years?
A. Yes, sir.
Q. What effect does it have on you?
A. None that I can notice.
Q. As far as you know, is your health good?
A. Yes, sir.
(Witness excused.)

M. E. TURNER,
the next witness called on behalf of the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your occupation?
A. Dentist.
Q. What is your age?

A. Thirty-six.
Q. Do you drink Coca-Cola?
A. Yes, sir.
Q. How much?
A. I drink from one to two a day.
Q. Do you ever drink more than two?
A. I have at times.
Q. What is the most you recall having drunk?
A. About four.
Q. How long have you been drinking it?
A. My first knowledge of Coca-Cola was probably 20 years ago.
Q. Have you been drinking it more or less since that time?
A. There was probably an intermission up to about 16 years ago when I went to Atlanta.
Q. Do you drink it at all seasons of the year?
A. I naturally drink a little more in summer than in winter.
Q. What effect does it have on you?
A. None that I can notice.
Q. What is the condition of your health?
A. Very good.
Mr. Sizer: I believe that is our limit now.
(Witness excused.)

CHESS LAGONARSINO,

the next witness called on behalf of the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your occupation, Mr. ——
A. Soda dispenser.
Q. Whereabouts?
A. 21 Peachtree, Atlanta.
Q. How long have you been in that business?
A. 12 years.
Q. Do you conduct a soda water establishment there?
A. Yes, sir.
Q. At which you serve drinks?
A. Yes, sir.
Q. What kind?
A. All soda fountain drinks, Coca-Cola, strawberry, anything.
Q. Is there any difference in the quality and flavor of soda fountain drinks, according to the way in which it is mixed?

A. Yes, sir.

Q. Can you explain how that is?

A. What drinks?

Q. Take Coca-Cola for instance?

A. Sometimes you put too much syrup in it and it is too sweet, sickening. Sometimes the carbonated water is not right and it will make you sick — it is flat.

Q. Then, is there a difference in the manner in which the carbonated water and syrup are mixed?

A. Yes, sir; some dispensers do not put enough water and they have too much foam, some people don't like it, it is sloppy.

Q. Is there a difference in the flavor as to whether you stir it with a spoon or pour it from glass to glass?

A. Is there a difference in the flavor?

Q. In the character of drink?

A. Yes, sir.

Q. What is that due to?

A. Gases.

Q. Do you strain the syrup you use at your fountain?

A. Yes, sir; everything.

Q. And you strain the Coca-Cola syrup among other things?

A. Yes, sir.

Q. Have you had occasion to observe what you get out of Coca-Cola syrup when you strain it?

A. Yes, sir.

Q. How much Coca-Cola have you used?

A. I have been with that company about twelve years and I have strained and had strained about fifteen to twenty thousand gallons.

Q. What kind of substances have you found in the Coca-Cola syrup used in that period?

A. The reason I strain it is on account of sometimes you find a splinter. Knocking the bunghole in, there is a piece of bagging that will come in contact with the pump, and if you don't strain it, it will stop the pump.

Q. If you bore a hole in the side of keg, will that give splinters or sawdust in the Coca-Cola syrup?

A. Yes, sir.

Q. Have you ever found anything in the sediment or what is left in the sediment except this?

A. Some char from the barrel or something of that kind.

CROSS-EXAMINATION,
BY MR. MILLER:

Q. You are not a bacteriologist?

A. No, sir.

Q. You don't know what kind of germs might be in there that you could not detect?

A. No, sir.

(Witness excused.)

J. W. MALLET,
resumed the stand for further examination:

REDIRECT EXAMINATION,
BY MR. HIRSCH:

Q. You stated on examination you were at Maywood, New Jersey, and saw Merchandise No. 5 manufactured?

A. Yes, sir.

Q. On how many occasions?

A. Two.

Q. What kind of wine was used in the manufacture?

A. White California wine.

Q. I will ask you in the case of soda water where they have raspberry or strawberry flavor, is it possible to detect the quantity of this flavor or where the flavor is derived from?

A. No, sir; neither is the material giving the flavor known, nor is it possible to determine the amount.

Mr. Miller: I move to exclude that.

The Court: The motion is overruled. It is offered as an illustration, I take it.

CROSS EXAMINATION,
BY MR. MILLER:

Q. Now, then, how far apart were these occasions when you were at Maywood, New Jersey, and observed operations there, Doctor?

A. One, I believe, was in the month of November, and the other in the month of March following — November, 1909, and March, 1910.

Q. What is the percentage of extractive matter in California white wine?

A. I was questioned before upon that, sir, and I stated I had no knowledge myself of from any experiments with that particular wine, but there are recorded a percentage of extractive matter including tannin, as far as I have been able to learn, from one and four-tenths to two per cent.

Q. Of extractive matter?

A. Yes, sir; solid matter left on evaporation.

Q. And of that extractive matter, what proportion of that is tannin?

A. That I can't answer. It has never been determined.

Q. California white wine has a taste, that is the white

wine used at Dr. Schaefer's factory?

A. Yes, sir.

Q. Which is very distinctive?

A. Yes, sir.

Q. Now, I will ask you if you know of any authority upon the subject of tannins from which you could determine the percentage of tannin in kola?

A. I know of none by which it can be determined with accuracy.

Q. I will ask you to consult the publication which I pass to you, which is a German publication — you read German, I believe — by Kinker, and I will ask you if he does not give the amount of tannin as contained in cola, and if so, to tell us if that is not a standard publication, and what amount is given.

Mr. Hirsch: He was asked as to whether there was any authority as to how to determine the amount, and now he gives him an authority to show ——

BY MR. MILLER:

Q. State whether or not this is a standard publication.

Mr. Hirsch: We can admit that was a standard publication and it would not be contradicting the witness.

Mr. Miller: Well, do you admit it?

Mr. Hirsch: I said we could, I don't know anything about that authority.

Mr. Miller: I think the witness will state this is a standard publication and does record it, that it is an authority on that subject, and as he says he does not know the percentage, I will ask him to refresh himself and tell us what percentage is.

The Witness: The publication is a journal of applied chemistry, and of course is, as a whole, a good authority, but it contains articles by different persons — as to whether or not the articles can be said to be good authority, I do not know. The article to which my attention is drawn contains also reports of analyses of cola nuts made by many different persons and some show tannin and others do not give tannin or the alleged percentage.

BY MR. MILLER:

Q. Now, Doctor, called on to state as to the amount of extractive matter in the cola nut from your own knowledge and with the publication which you have before you, if you regard it as reliable, I will ask you to state what is the percentage of extractive matter in cola?

A. I can't answer, sir, from my own knowledge. I have not myself determined it, and the statements here are from

different authorities and different persons, some of them I know nothing of, and they differ amongst themselves.

A. Then you know of no authority by which it can be determined as to the amount of extractive matter in cola?

A. Not with accuracy. Here are certain statements which must be taken for what they are worth.

Q. Do you know of any authority that would throw any light on the inquiry as to the percentage of tannin there would be in this extractive matter that would come from cola?

A. I can only repeat what I have stated. Some of these statements give an alleged percentage — they do not give the percentage or give any means of judging whether the figures given are correct — they stand for themselves, and ought to be taken for what they are worth.

Q. Do you class tannin as extractive matter?

A. It practically comes under that head, but of course the word extractive matter, is not one of strict scientific meaning, but it means what is included in the particular salt, in the case above it is dilute alcohol, and is generally intended to group together in those substances the nature of which is more or less indefinitely known and individual amounts of which are unknown.

Q. Didn't you in your analyses of Coca-Cola syrup class tannin as a preparation of extractive matter?

A. Certainly, I lumped it together with the other.

Q. Then, isn't it generally recognized as a part of the extractive matter?

A. When tannin is present there — there are many cases in which the extractive matter is given without indicating anything.

Q. Yes, in this extracted matter that you got as a whole from this decoction that you had made you did not determine the relative amounts of tannin at all?

A. No, sir; because I didn't believe it possible.

Q. Now, isn't it also true that tannin that is found in California wine, that is present there, that after wine has been in the cask or the barrel, there is a percentage of tannin that results from the contact of the wine with the cask or barrel, depending on the length of time that it would have been contained in the container?

A. When the barrel or cask is made of oak, as it commonly is, that is very frequently the case.

Q. And that is likewise a variable percentage, is it not?

A. Yes, sir.

(Witness excused.)

S. P. SADTLER,

recalled for further examination, testified as follows:

DIRECT EXAMINATION,
BY MR. HIRSCH:

Q. Doctor Sadtler, you advised me on yesterday evening that you would like to take the stand and correct an error you had made in your testimony.

A. Yes, I had stated in cross-examination with regard to the tests for tannin and the getting of the olive green coloration — the majority of these tests, all of them were distinctly described by the action of reagents when gotten with No. 5 or else with the coca extraction matter, so-called which was obtained from the decocainized leaves after a previous treatment with chloroform, and then the aqueous solution cleared and tested with reagents. I said in answer to the question that I had gotten this reaction with the whole syrup — Coca-Cola syrup. I find a reference in my notes, to the effect that I did get a corresponding olive green color with the Coca-Cola syrup. I am inclined to think — I have not an accurate record here, but I think I got that coloration. I have a definite statement — after I had tried the test with the fuller's earth in connection with the caramel — because I am free to confess that in Coca-Cola syrup, as the finished product, the color is too deep to show olive green coloration with ferri chloride. I want to make that correction so as to put it straight in the record.

CROSS EXAMINATION,
BY MR. MILLER:

Q. Were the experiments you made on the decoction of coca and cola and Coca-Cola syrup without attempting to separate the tannin and working on them alone?

A. There was no separation in actual sense, of the tannins. I explained yesterday that I made separate decoctions of the tannin coca leaves and cola nuts, and use those filtered decoctions to test. I also tested the aqueous solution obtained from the decocainized leaves sometime before that and made a number of tests, including one with ferric chloride.

Q. Then, as I understand, there was no attempt to separate the tannins by you, was there?

A. Not with accuracy.

Q. Was there any attempt made?

A. No, sir; not to separate the tannins from other matter which would be in the decoction.

Q. How did you filter the decoction of cola, if you did do that?

A. As I stated yesterday, the ten grams of the ground cola nut were digested, boiled in one hundred cc. of water. That was allowed to rest half an hour after the boiling, and

then filtered, and that filtered clear decoction was taken for the test.

Q. Do you state that in that kind of treatment, you can filter out any substance of the cola at all?

A. The insoluble portions are filtered out.

Q. Did you determine what that was?

A. No, sir.

Q. What kind of a filter did you use, a cloth strainer or paper?

A. It was the ordinary qualitative chemical filter paper.

Q. How much of the solution went through?

A. Filtered the whole decoction.

Q. How much was that?

A. We obtained in the test?

Q. After it had gone through the paper, I mean, how much did you get?

A. There was obtained in that test probably 25 cc., that is approximately several fluid ounces.

Q. What are the ingredients in the extract of coca other than the tannins?

A. I do not know from intimate accurate examination. I do not know whether it could be made very readily. I found resinous matters, matters which, however, were made more soluble in a little ammonia which I added to the solution, and then I brought into a solution a little more fully with the aid of ammonia, and then let it stand in a warm place. I allowed the ammonia to disappear before the tests. They were in the nature of slightly resinous matters.

Q. That was in the extract of coca?

A. That was in the decocainized coca leaf.

Q. The infusion you made from that?

A. Yes, sir.

Q. What are the ingredients in the extract of cola other than the tannin?

A. I do not know except from that published statement in regard to cola.

Q. In that ammonia test that you speak of, do you think you got rid of all the ammonia?

A. I do.

Q. By allowing it to stand that length of time?

A. I do. I took care to see to that.

Q. That was the only test you applied to rid the decoction of ammonia — that was the only one you have described?

A. I was sure the ammonia was off. I tested it with a delicate test to see if any of the ammonia was left.

Q. What was that test?

A. Hydrochloric acid fumes.

Q. Would that detect minute quantities?

A. It will detect any appreciable quantities more than just a small test, that would be recognizable.

Q. You did not attempt to make a quantitative analysis to determine as to amount of tannin — let us distinguish between qualitative and quantitative. Did you make a qualitative test to determine whether or not the ammonia was present?

A. I did not try anything like Nessles reagent, no extremely delicate test for ammonia.

Q. If you do not know what the ingredients were, and I understand from your statement that you do not pretend to give us all that was in the extract of Coca-Cola, how can you tell that they might not have an influence on the tannin reactions that you resorted to?

A. I do not suppose that could be stated positively, but the reagents are those which are usually recognized and applied for the examination of tannin-obtaining solutions.

Q. They are the general free agents, as I understand you, but you do not pretend to state that these other substances you found in connection might have influenced it in some way?

A. No, sir; I don't say that it is possible.

Q. Do you know whether or not if there would be a slight difference between the tannin of coca and of the cola nut, whether it would be due to a different concentration of the solution?

A. In the comparative test I applied, I did not have that condition. I had taken the same weights of material and the same amount of liquid to make my solution.

Q. How do you account for the reddish tinge which you say was present when the ferric chloride was added to the cola tannin?

A. Without any very special investigation of the matter, I believe that the color given by ferric chloride with the tannin of cola nut, is always slightly different in color from that given by the coca leaf. I got in the coca leaf a very strong olive-green coloration. I got in the other case a different shade of green, a greenish red I should call it. I suppose that is characteristic of the cola tannin under those circumstances.

Q. Now that distinction as to color or difference of coloration results in the case of many tannins when ferric chloride is applied, does it not?

A. Yes, sir; there are many changes of color.

Q. Did you ever hear of or know of what is termed cola

red?

A. Cola red is the decomposition product resulting from the compound called colanine, which originally present in the fresh cola nut, and what is chemically called glucosize which breaks up under various influences, sometimes under dilute acid and sometimes under the influence of exposure to air in solution, and cola red is a decomposition product of that.

Q. Do you know what acetate of lead precipitates from the decoctions of coca and cola such as you have besides tannin?

A. I don't know except that lead acetate would probably precipitate a good deal of coloring matter in addition to the reaction for tannin.

Q. You never made any analysis to determine what else it would precipitate?

A. No, sir.

Q. Now, take Merchandise No. 5, would not those solutions you applied precipitate any combination of tannins that might be in the Merchandise No. 5, or are you prepared to speak on that point?

A. Do you refer to the ferric chloride reaction applied to Merchandise No. 5?

Q. I mean the tests that were applied, would not they precipitate a combination of tannins that might be in No. 5 along with any other matter that they would precipitate? I am talking chiefly about the lead acetate you use.

A. Some of them would and some of the reagents would precipitate more than one tannin.

Q. How about lead acetate? What would it do?

A. Lead acetate would probably precipitate a mixture of several substances.

Q. Is lead acetate a characteristic reagent or reaction under those circumstances?

A. For tannin, do you mean?

Q. Yes.

A. Not as distinctive as ferric chloride reaction.

Q. Did you separate the coloring of the tannin — I mean did you separate the tannin from the coloring matter in either of the infusions?

A. In the examination of the cola tannin, I tried to follow the work of Doctor Prescott, who had made a study of cola tannins, but I worked with the dried ground cola nut and he had worked with the fresh cola nut. I was not successful in getting the cola tannin. I added acetic ether and then removing the chloroform in that way, I did get the tannin material in a purer condition than it otherwise would have been gotten.

Q. Then in these experiments you did not use acetic ether?

A. In the case of the cola tannin, not in the case of the coca leaf, only in the case of the cola tannin, and those were not experiments that I described as being comparative experiments of the two decoctions.

Q. Now, then, what does Prescott give as the per cent of tannin in cola?

A. I do not remember whether he states that in that article or not. I refer to an article which he published in 1897, I think it was on the peculiarity of the cola tannin of the cola nut, but I do not know that he gives the precipitant of tannin. I do not recall it.

Q. There is an appreciable quantity of the tannin in the cola?

A. Yes, sir.

Q. When the tannins of coca and cola are mixed together, how can you determine the relative amounts, Doctor?

A. I don't suppose it can be done quantitatively.

Q. Then you can't apply the comparative test, can you?

A. Well, I said it could not be done quantitatively — I think that the intensity of the color reactions would be a partial indication as to the relative proportion.

Q. Now, if you bring in contact with these tannins the tannin of California wine and also such as might come from the barrel or cask in which the wine has been contained, then is there any comparative test?

A. I think it is possible despite that, for the reason I have tried tannin reaction of California wine used at Maywood, New Jersey, and it is very trifling, it is not of such nature as to interfere with the color reaction of either of the other two.

Q. The difference in the amount of extractive matter you get from No. 5 and that which you get from Coca-Cola syrup, the finished product, that is the percentage ——

A. I don't know as they are comparative, because in the case of the Coca-Cola syrup you have fifty per cent of sugar, and the two are not really comparable because the Coca-Cola syrup is a composite.

Q. Now, what is the difference that you would get between the cola tannin and the combination tannin, that is of Merchandise No. 5 and all these combined together which you found in Merchandise No. 5?

A. The results found as determined by the ferric chloride in the combined tannins, is found in Merchandise No. 5 — that of coca — and then that of coca leaf tannin.

Q. State what that consists of, both as to coloring and

likewise as to percentage?

A. I can't give it to you.

The Court: He has stated that he can't give you the percentage. Now, as to the coloring ——

The Witness: The resulting color is that of coca leaf tannin.

Q. And that is the only thing you have to go by and that is the thing upon which you base your answers that there is a difference between the two?

A. Well, I have examined the coca leaves and I have examined No. 5, and I have gotten the same reaction and the same odor of the coca leaves in the extractive matter from No. 5, and the similarities were so distinct that I think that I was entitled to think that the same material was there.

Q. Now, while you were observing this process at Maywood, New Jersey, what proportion of California wine, this white wine was mixed in order to make Merchandise No. 5?

A. If I remember right, eighteen barrels were taken to make 900 gallons of the product.

Q. And these hold how much approximately?

A. Fifty gallons to the barrel.

Q. Fifty?

A. Yes, sir.

Q. Doctor, as a result of the color reaction, could you give us approximately an idea as to the amount of combined tannin present in No. 5?

A. No, I can't do that.

(Witness excused.)

C. E. CASPARI,

recalled for further examination, testified as follows:

CROSS EXAMINATION,

BY MR. MILLER:

Q. Now, Doctor Caspari, you heard the testimony of Doctor Fuller as to his use of animal charcoal in the test that he made.

A. I did not hear his testimony, I was not here when it was given, but I have read the transcript of it.

Q. I will ask you if it is not a fact that the use of animal charcoal, if it had any effect at all, it would merely serve to decrease the amount of caffeine content and that it would have no other effect?

A. You mean so far as quantitative relationship is concerned?

Q. Yes.

A. I think that is true.

Q. Would it have any other appreciable effect so far as the determination of the caffeine content is concerned?

A. No, sir; but there is to be said that the amount of decrease would not be constant.

Q. I agree with you about that altogether, but could it have an effect otherwise than that?

A. No, sir; it could not.

Q. That is the only effect it would have in the various analyses that Doctor Fuller testified to and you have read the testimony, that it might have made a slight increase?

A. No, decrease.

Q. I mean decrease, and that would not have been appreciable?

A. I am not prepared to say that.

Q. It would be what you generally term negligible?

A. It might have been a very small quantity, but figured on the percentage basis on the entire amount of caffeine present, it might have been appreciable decidedly?

Q. That is the only effect it would have had?

A. Yes, sir.

Q. What was your process when you came to using the solvent for determining the quantity of extractive matter in coca or cola — did you use water first or did you use chloroform, or what did you use?

A. I did not attempt to determine the extractive matter in Coca-Cola — quantitatively.

Q. Can you determine that?

A. Approximately, but not accurately.

Q. What is the approximate percentage of tannin in cola?

A. I don't know.

Q. I thought you said you could tell?

A. I can do lots of things I have not done, and that is one of them.

Q. You are not prepared to give an opinion as to the percentage of tannin in the coca either?

A. No, sir.

Q. And in these analyses you did make of merchandise No. 5, what was the percentage of extractive matter which you found?

A. I didn't determine the percentage of extractive matter.

Q. Did you determine the quantity of it in any given amount of the mixture, and if so, how much?

A. No, I did not.

Q. What kind of coca did you use when you were mak-

ing the infusion of coca?

A. You mean what is the botanical variety?

Q. Yes.

A. I don't know which it was. It was coca I had taken from Doctor Schaefer's factory. The coca leaves I had taken from Doctor Schaefer's factory.

Q. Do you know whether it had been decocainized?

A. It has not been decocainized when I got it.

Q. Did you attempt to decocainize it?

A. No, sir; I did make the experiment, however, on a sample of decocainized leaves, that I also got from the factory.

Q. You only knew they were decocainized by what somebody told you?

A. I saw them decocainized.

Q. By that process which he described?

A. Yes, sir.

Q. If I understand your experiment on the leaves you put in the infusion, that was based on the leaf before it was decocainized?

A. Yes, sir.

Q. What experience, have you had, Doctor, in the study or determination of tannin contents?

A. It is pretty hard to say. I have determined the presence of tannin in quite a number of different things. I have only made a very few quantitative determinations of it.

Q. Can you state what, if any, difference there is in the behavior of the tannin of the cola and the tannin of the white California wine under the treatment that you gave in your analyses you testified about in chief?

A. Yes, I think I can?

Q. What is the difference?

A. In the first place, the white California wine contains a very minute quantity of tannin. It contains less than one-tenth of one per cent. of tannin. That is based on figures in Leach's Food & Drug Extraction, and the California wine in Doctor Schaefer's factory, when tested with ferric chloride, for example, gives only a very faint reaction for tannin, and that is in the color, reddish-brown is the color produced when the infusion from the cola nuts is treated with ferric chloride.

Q. You mean by that when you apply ferric chloride directly or brought it in contact with the wine?

A. With the wine, yes, sir. In other words, you can give me California wine and an infusion of cola nuts, and I think I could tell the difference between them.

Q. That test you have referred to, would be as to the

wine by bringing it directly in contact with ferric chloride?

A. Yes, sir; I would add ferric chloride to the wine.

Q. Did you make any tests of the California wine that was used in Doctor Schaefer's factory to ascertain whether there was tannin in it, the percentage of tannin I mean?

A. No, sir.

Q. You don't know how long it had been contained in the casks or barrels from which it was taken?

A. No, sir. I made a qualitative test on that wine, understand, but not any quantitative test.

Q. What reaction will the tannin of cola give with iron chloride, Doctor?

A. The tannin of cola?

Q. Yes.

A. The infusion that I made from cola nuts, practically ten per cent infusion, reacted and produced a reddish brown color which — you said with ferric chloride?

Q. Yes.

A. A reddish brown color.

Q. What was the reaction in the case of gelatin?

A. I used a one per cent solution of gelatin, one part of gelatin to a hundred of water, and got no reaction with infusion of cola.

Q. How did it behave in cinchonine sulphate?

A. I got a very slight precipitant, so slight as to be negligible, merely turbidity.

Q. And what you would call qualitative rather than quantitative?

A. All of these reactions, I think I said a dozen times, were qualitative and not quantitative.

Q. Did you obtain that reaction after you had boiled the cola?

A. I didn't boil it, I poured the water boiled it, the water, and poured it on the powdered cola nuts and left it stand a half hour and filtered it and used that filtrate.

Q. Did that cool or not in the meantime?

A. Yes, sir; it cooled.

Q. And how much filtrate did you get, how much went through?

A. Now, I didn't measure that. I would have to estimate that, but I should say about two-thirds of the water I used originally was recovered.

Q. What would that amount to?

A. I used 100 cc, about three fluid ounces or a little over, and I got about nearly, as I could judge, about two ounces back of the former filtrate, of the particular filtrate.

Q. By tannin, that means tannic acid always?
A. Yes, by tannin.
Q. How do tannins in general and cola tannins in particular behave toward starch?
A. I don't know how; cola is a sort of starch. There is some starch in the cola nut. We can see that by the fact that the powdered cola nuts swell up a little when you add water to them and let them stand.
Q. Well, explain in detail, then please, the qualitative difference between the reaction or reaction agent that you applied then to coca tannin and the combined tannin found in Merchandise No. 5?
A. In the first place, I want to get away from the use of the word tannin. I did not isolate the tannin — I worked with a decoction of cola and coca and Merchandise No. 5.
Q. And you had in each of your mixtures other things aside from your tannins?
A. Yes, probably.
Q. And you are not prepared to say that those other things did not influence the tannins?
A. Yes, sir; they might have done it, but it is immaterial what you call that substance, whether you call it stewed prunes or tannin, you get the same reaction in the three instances, and whatever the per cent in that is shown to be present in there.
Q. Now, does the fact show that there is any difference qualitatively, and if so what was it between — that is qualitatively now?
A. (Interrupting.) I understand.
Q. In the results obtained in these three infusions of coca and cola and Merchandise No. 5?
A. I can best state that difference by saying that in the qualitative reaction in Merchandise No. 5 the presence of the constituents that were present in the decoction of coca predominated distinctly over those of the cola decoction.
Q. Now, then, give those specific reactions so that we can ascertain what they were.
A. I gave those the other day on cross examination.
The Court: I think the witness went through that.
The Witness: I went through that all, and it is in the record.
Mr. Miller: There is not anything here from which we can determine how he draws his conclusion.
The Witness: I have no objection to stating it again if you desire it.
Mr. Miller: His conclusion is given now like it was the other day, but the premises from which he draws it, are

not given.

The Court: He went into it into considerable detail.

The Witness: I went into it with the different reagents, the lead acetate, the potassium ferri cyanide, the ferric chloride, gelatin and cinchonine sulphate.

BY MR. MILLER:

Q. You applied that to all?

A. Yes, sir.

Q. From that application, you conclude that there was a distinct predominance of one tannin as against the other?

A. Well, I would go so far as to say a distinct predominance. There was evidence that the material in the cola infusion, the cola tannin or the tannin derivative or tannin-like substances, — there was more of that present in the No. 5 than there was of the material characteristic of the cola infusion.

Q. How can you tell that?

A. Well, because the qualitative reaction for the coca constituents were more — I can't think of the word — more accentuated than were the reactions for the cola infusion.

The Court: If you say those details are not contained in the former testimony, you may ask for them.

Mr. Miller: He has now given them, and I don't want to go any further in detail on that point.

BY MR. MILLER:

Q. I understand that the same tests were applied to all, but it is suggested to me that the specific test from the chemical standpoint has not been given in detail, and if he gives it as to one, I understand the same treatment is as to all. Now, give it as to one.

A. The No. 5 was first evaporated and got rid of the alcohol present, and then diluted again with water back to the original volume and then extracted with acetic ether, and that acetic ether was then separated and evaporated off on the water bath, and that residue was taken up with water. The insoluble matter was filtered off and to that filtrate was applied tests with the agents which I enumerated and which I gave in connection with the coca and cola infusion.

Q. From that point, I understand the process was identical?

A. Yes, sir; I took several portions of the sample of coca and cola and prepared a solution of No. 5.

Q. Did you take the same quantity to start with?

A. Approximately in the case of the cola and coca infusions, and I took very closely the same amount.

Q. But how about No. 5?

A. Approximately the same.

Q. How much was that?

A. How much of No. 5 did I start with?

Q. I mean from this point.

A. From this point on, I took it — as near as I can estimate it, about 5 or 10 cc.

Q. From that point the treatment was similar?

A. Yes, sir.

Q. Give the detail?

A. I added to one portion of the solution lead acetate and obtained a light, dirty colored precipitant from that. To another portion I added the ammoniacal solution potassium ferri cyanide and I got a dark reddish-brown color from that. To another, I added ferric chloride and got an olive green color. That reaction, more than anything else showed me that the tannin or tannin-like substance, whatever it is of the coca, was present in larger quantities than the tannin like substance of the cola, because of the predominance of the olive green color as against the brownish red which coca alone produced with the ferric chloride. Then the action with cinchonine sulphate and with gelatin were tried. Separate portions of those solutions were treated in the same way, and I got such a — you couldn't call it a precipitant but a turbidity with gelatin which I got with coca, but not with the cola at all, and with the cinchonine sulphate, a very, very slight precipitant. The strength of the cinchonine sulphate solution was between one and a half and two per cent.

Q. Did you get a precipitant with Merchandise No. 5?

A. With which reagent?

Q. With the cinchonine?

A. A very, very slight one.

Mr. Miller: Those questions as to details were prepared by someone after the testimony was given.

The Court: I have no doubt you are covering everything.

(Witness excused.)

W. H. FOSTER,

the next witness called on behalf of the Coca-Cola Company, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. What is your occupation?

A. Foreman at the Coca-Cola Bottling Works.
Q. Here in Chattanooga?
A. Yes, sir.
Q. Are you the W. H. Foster to whom the forty barrels and twenty kegs attached in this case were turned over to hold?
A. Yes, sir.
Q. Did you submit any samples out of that attached product to anyone, and if so, to whom?
A. I sent six lots.
Q. Give the dates and the persons to whom you made each one of those shipments?
A. I sent one lot to S. P. Sadtler, Philadelphia, on 11/27/09.
Q. You sent them all by express.
A. Yes, sir.
Q. That was fountain or bottlers syrup?
A. Fountain.
By the Court: Give them all.
The Witness: To A. E. Caspari, St. Louis.
Q. Is that A. E. or C. E.
A. It is C. E.
W. S. Haines, Chicago. L. Veillong, St. Louis.
Mr. Sizer: That was one that was not introduced; you needn't mention that.
A. J. A. Wesener, Chicago. V. C. Vaughan, Ann Arbor, Michigan. That was on the 11/25/09.
Q. 25th of November, 1909?
A. Yes, sir.
Mr. Miller: We will want to recall him when we get certain samples.
(Witness excused.)

J. F. JOHNSON,
recalled to the stand for further examination, testified as follows:

DIRECT EXAMINATION,
BY MR. SIZER:

Q. Who furnishes the bottles and bottle tops in which you put up the bottled coca-cola here?
A. The Ruth Glass Company, of Terre Haute, Indiana, and the Chattanooga Bottle and Glass Manufacturing Company, of Chattanooga, furnish the bottles, and the tops are furnished by the Crown Cork & Seal Company, of Baltimore.
Q. They are purchased by you?
A. Yes, sir.
Q. Are they purchased by you or by the Coca-Cola

Company, of Atlanta?

A. They are purchased by the plant here.

Q. Do the Coca-Cola Company, of Atlanta, have anything to do with getting them?

A. No, sir.

Q. One or two bottle tops have been introduced containing the name Coca-Cola without the hyphen, and also a bottle containing the name without the hyphen; can you explain how the omission of the hyphen on that bottle and top occurred?

A. I can tell it only as the manufacturer told me.

Q. What do you furnish the manufacturer?

A. We furnish the trade mark to the manufacturer always.

Q. Containing the hyphen?

A. Yes, sir.

Q. Do you or not instruct the manufacturers to copy the name on the bottles as contained in the trade-mark?

A. Yes, sir.

Q. And as a matter of fact are the bottles you are now using, bottles that have the hyphen on?

A. Practically all of them.

Q. Do you know how many were made without a hyphen?

A. A very small per cent and that was an accident?

Q. Is that true with respect to the tops?

A. The tops that were used in 1909 and 1910 and that we are using now, have the hyphen. There was a short space of time, perhaps a month or so in each year, that we have used the top without the hyphen.

Q. Why was it that tops without the hyphen were used?

A. I don't know how they happened to furnish that, but I know that in 1909 and 1910, we used the hyphen.

Q. Was there any intention of getting bottles or tops without the hyphen or to depart from the copy-righted name?

A. No, sir.

Q. I hand you a collection of certain objects, and I ask you to state what they are.

A. Advertising matter used by this plant, all of it, with the exception of the bottle and the crown top that is furnished the local plant for distribution.

Q. These are the bottles in which you bottle Coca-Cola?

A. Yes, sir; there are eighty thousand like that in the trade now.

Q. What is this?

A. Thermometer.
Q. Sent out as advertising matter?
A. Yes, sir.
Q. And this?
A. A sign.
Q. Is that also advertising matter?
A. Yes, sir.
Q. And these?
A. Blotters.
Q. Advertising matter again?
A. Yes, sir.
Q. What is that?
A. Another sign.
Q. What is this?
A. Napkin.
Q. These are bottle tops?
A. Yes, sir.
Q. And that?
A. Another sign.
Q. And this?
A. Another sign.
Q. That is oil-cloth sign?
A. Yes, sir.
Q. And here is another oil-cloth sign?
A. Yes, sir.
Q. Was not there a card in there?
A. I don't remember it.
Q. Yes, here it is. This a base-ball score card?
A. Yes, sir.
Q. What is this?
A. A waiter.

CROSS EXAMINATION,
BY MR. MILLER:

Q. When was it that this occurred that you didn't get the hyphenated name?
A. The foreman said it was the latter part of the year that the hyphen wore off.
Q. The latter part of 1910?
A. Yes, sir. We got a lot of bottles in then and some of them are in the trade yet.
Q. Some of them in the trade yet?
A. Yes, sir.
Q. By "in the trade" what do you mean?
A. They are mixed with our bottles.
Q. Do you use the same bottle more than once?
A. We use it as long as it lasts.
Q. You continue to use your bottles over and over?
A. Yes, sir.

Q. You call that being in the trade?
A. Yes, sir.
Q. Look at this bottle we have here and see if you could find any hyphen on that top or on the bottle?
A. No, sir; this is one of the bottles we had the other day that has not the hyphen on the bottle or on the top.
Q. All of these bottles that accidentally got out without the hyphen being on the bottle also had tops on them that were accidentally made without the hyphen being on the top?
A. They didn't all have it. Last year we used hyphenated crowns all year except a month or six weeks.
Mr. Miller: I want to put that in as Exhibit C.
(The exhibit was marked as requested.)
Q. There is no hyphen on the top or bottle?
A. No, sir.
Q. Now, look at this that I will file as Exhibit Y and state whether there is any hyphen on top or bottle of that?
A. No, sir.
Q. Here is another which you will mark Exhibit X. Now, I will ask you to state whether there is any hyphen on the top or the bottle of that?
A. No, sir.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. Do you know whether those bottles came out of the same case?
A. No, sir.
Q. You have no means of telling when they were put in?
A. I know when the new crowns came in with the hyphen on them. We were using a crown without a hyphen until the 15th of March.
Q. Commencing when?
A. On the 15th of March, they were billed from the Crown Cork & Seal Company.
Q. Of this year?
A. Yes, sir.
Q. How long have you been using this advertising matter, such as filed here?
A. For years, ever since we have been in business.
Q. How long have you been in business as bottling Coca-Cola?
A. I don't know, but I think nine or ten years this plant has been running.
Q. And this is the kind of advertising matter used in all that time?
A. Yes, sir.

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. How do you account for these periods that the hyphen got out of fix both at the bottle factory and the cork factory?

A. I don't think it got out of fix at the Crown Cork & Seal Company. I think they were making it that way, but the plate at the bottle works got out of fix.

Q. So you have been using it right along with the top without a hyphen?

A. Yes, sir; when they furnished them without it, we use it.

Q. Your relations with the Coca-Cola Company, the claimant in this case, are very intimate?

A. Yes, sir.

Q. Your syrup is all procured from the Coca-Cola Company, and if there is an infringement suit or trade-mark suit brought anywhere, you frequently defend it jointly?

A. No, sir; the Coca-Cola Bottling Company sell me the syrup. They ship it from Atlanta and I buy it from the Coca-Cola Bottling Company.

Q. I asked if your company, in connection with the Coca-Cola Company, did not file a suit against a bottling company in South Carolina?

A. I don't know anything about that.

Q. What is the style of your company?

A. The Coca-Cola Bottling Works.

Q. You never heard of that suit?

A. I never heard of that South Carolina suit until Judge Candler read it in his testimony the other day. That was the first I ever heard of it.

Q. That is the first you ever knew that your company had a suit?

A. That is not my company.

Mr. Sizer: We may have a question or two to ask of someone else, but we are about through.

The Court: We will adjourn until tomorrow morning at nine o'clock.

(Thereupon at two o'clock, Court adjourned until nine o'clock A. M., April 1st, 1911.)

CHATTANOOGA, TENNESSEE,
SATURDAY, APRIL 1, 1911, 9 O'CLOCK A. M.

Court met pursuant to adjournment.

Appearances: Same as before.

Mr. Sizer: May it please your Honor, the defense is through, with the exception of a deposition which we have been expecting ever since the proof commenced, but which

has not reached here yet. In the event that deposition reaches Chattanooga before the case goes to the jury we would like to offer it. With that statement we rest.

The Court: If the deposition gets here before the trial closes, you mean?

Mr. Sizer: Yes.

The Court: With the right on the part of the Government to rebut it, that may be done.

Mr. Sizer: Then we rest.

CLAIMANT RESTS.

THE GOVERNMENT IN REBUTTAL.

The Government then recalled the following witnesses:

C. HOWARD CANDLER,

being recalled for further examination, testified as follows:

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Mr. Candler, while you were on the stand you were asked to give to the chemists of the Government, Doctors Fuller and Emery, the ingredients and the proportions in which they entered into the Coca-Cola syrup?

A. Yes, sir.

Q. Well, did you do that truthfully?

A. Yes, sir.

Q. Now, in this batch of ingredients that you made up without the Merchandise No. 5 and sent out one of them to Doctor Caspari, is it or not a fact that you made one gallon of that mixture?

A. No, sir. I got that out of the tank.

Q. What was the batch that you made up in which there was one gallon, if there was one?

A. That is the batch I made, omitting Merchandise No. 5.

Q. And you sent a sample of that to Doctor Caspari?

A. Yes, sir; along with the regular Coca-Cola.

(No re-direct examination.)

Witness excused.

Mr. Miller: We desire to call Judge Candler to the stand for a few questions.

JOHN S. CANDLER,

being recalled for further examination, testified as follows:

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. You stated in chief, Judge Candler, that this mix-

ture of Coca-Cola had been made according to the same formula ever since you had known about it, so far as you knew. I will ask you to state whether or not that answer was based on your personal knowledge, or whether it was based in part on information that you had received prior to the time you made this contract with Doctor Schaefer.

A. Well, as I told you, I am not a chemist. I never myself manufactured Coca-Cola, but I have represented the Coca-Cola Company ever since its organization. I represent my brother, Asa G. Candler, who manufactured Coca-Cola before he sold it to the Coca-Cola Company. My office was in the same building with him. I was there daily, constantly connected with the business, and from those facts I stated that there had been no change in the formula from 1888 to the present time.

Q. Now, then, I ask you if it is not true that about 1892—I mean 1902 to 1904, you learned that there was a per cent. of cocaine in the mixture in the trial in the United States Court in Atlanta, and shortly thereafter that this contract with Doctor Schaefer was made.

A. If I can state what I learned—

Q. (Interrupting) That is just what I have asked you to do.

A. Yes. I will state that on the trial of the case in the United States Court it appeared from a statement by Doctor Crampton, a witness from the Treasury Department of the United States, that upon analysis, my recollection is, of some eight ounces of Coca-Cola syrup that he had been able to find, according as I recall his testimony, a bare trace of cocaine in that large quantity. He testified that the only way he could tell it at all was by touching it to his tongue, that he could not state there was any appreciable quantity there at all, but that that large quantity of syrup — with that large quantity of syrup, he had been able to get what he thought to be Coca-Cola—I mean, what he thought to be cocaine, and was able to state that it was cocaine from touching it to his tongue.

Q. That Doctor Crampton met you here yesterday for the first time during the trial?

A. I think I met him yesterday—it is immaterial; I think I met him either yesterday or the day before.

Q. And didn't your own chemist, Doctor Payne, in that same trial against The Coca-Cola Company, testify that there was approximately one four-hundredth of a grain of cocaine in that mixture, on that same trial?

A. My recollection is that Doctor Payne testified on that trial that there was not exceeding—that has been

nine or ten years ago and I think what you state is approximately correct. My recollection is that he testified there was not exceeding one four-hundredth of a grain.

Q. Of cocaine in an ounce of the mixture?

A. Yes, sir, of the syrup; that is my recollection of Doctor Payne's testimony.

Q. And shortly after that this contract with Doctor Schaefer was made?

A. My recollection about that, Mr. Miller, is that contract with Doctor Schaefer was not made for probably a year or so after that, and the reason for that was this: We were engaged in litigation with the United States Government on the question of that tax. My view of it was that there should not be one iota of change made until that litigation was over; I did not want it to appear in any way that we had made the slightest change in that until after that litigation was over. I did not want it to affect it one way or another, and my recollection is that litigation was not concluded in the Court of Appeals, finally concluded, for probably a year after that trial. But, of course, you will understand that these spaces of time are purely from recollection; I do not undertake to be definite about it after this length of time.

Q. Now, that litigation, as I understand, was as to whether or not this was a medicinal preparation.

A. As to whether or not this was a medicinal preparation and subject to the tax under the War Revenue Act, and it was decided it was not.

Q. It was decided it was not?

A. Yes, sir; on the trial of that case.

Q. Isn't it true that during all the time, speaking from your knowledge and information that you received, with your office there in this Coca-Cola Building, that Merchandise No. 5, or what has been popularly termed "Merchandise No. 5," has been used in the making of this mixture of Coca-Cola?

A. Merchandise No. 5 entered into the manufacture of Coca-Cola, from my knowledge, from 1888 up to the present time. Merchandise No. 5 has not been changed in the slightest degree except to eliminate that bare trace of cocaine which Doctor Crampton testified was there. It was never our purpose to have any cocaine there.

Q. I understand.

A. We always understood that there was none there, never intended there should be any there, and we did not know it was there until Doctor Crampton had found it.

Q. And Payne?

A. Yes, sir; until Doctors Crampton and Payne had

said it was there, and as soon as we could after that we got the best man we could find in the United States to get it out.

Q. And that was Doctor Schaefer?

A. Yes, sir.

RE-DIRECT EXAMINATION,
BY MR. SIZER:

Q. There is just a question or two I want to ask you, Judge Candler. You say that Doctor Crampton represented that he found one four-hundredth part of a grain?

A. No, Mr. Sizer, I didn't mean to say that. I do not think that Doctor Crampton designated any amount; my recollection is that Doctor Crampton said that he had found an inappreciable amount, a bare trace; that was Doctor Crampton's testimony, as I recall it.

Q. Is it true that Doctor Payne testified that there was one four-hundredth part of one per cent. under analyses?

A. Well, I must say I cannot say whether he said one per cent. or a grain, whether one four-hundredth part of one per cent. or one four-hundredth part of a grain. It has been a long time, but I do remember very well the one four-hundredth of one per cent., whether it was a grain or a per cent. I would not say now.

Q. That was the first knowledge or intimation that you had that there was any cocaine in it?

A. Yes, sir.

S. R. ROBERTS,
recalled to the stand for further examination.

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. I hand you what purports to be a copy of your report to the Medical Examiner of Public Schools of Atlanta, and I will ask you to state whether or not you are the Doctor Roberts who made that report, and look in the first column and if you recall that as being substantially your report of the health of the public school children of Atlanta, state it.

A. You have a list here with my name at the top, and another with Doctor Stevens' name. I can recollect at this time that the figures under my name are approximately the figures included in the report at the close of my work.

Q. Was that the work on which you based your statement the other day that you found only 23 children that were nervous.

A. Yes, sir; and I notice that he only found eight.

Q. I didn't ask you what he found; just asked you what you found. Didn't you report that you found anemia in 200 children?

A. I don't remember.

Q. You said this was approximately correct, and I will stand by that. Now, have you a copy of your report with you?

A. I will see. Yes, my report says 214, which is about the same.

Q. You have what purports to be a copy of your own report with you?

A. Yes, sir.

Q. As to the number of defective children, you reported that out of the 7,907 you examined, how many defective children?

A. 4,236.

Q. Defective children?

A. Yes, sir. Of course, that includes such a thing as decaying teeth.

Q. And of eyes you reported 1,171 were defective?

A. 1,246 here.

Q. And lungs?

A. 87.

Q. Heart?

A. One fifty-one.

Q. You mean one hundred and fifty-one?

A. Yes, sir.

Q. And of the glands?

A. 459.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. What is aenemia?

A. Either deficiency in the kind or deficiency in the quality of blood in the body.

Q. Did you ever hear of that kind of disease resulting from the drinking of Coca-Cola?

A. No, sir.

Q. Do sore eyes result from drinking Coca-Cola?

A. No, sir.

Q. Or impairment of the lungs?

A. No, sir.

Q. How about the heart? Does that—

A. No, sir, it does not.

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Don't you know that the medical authorities teach

that the heart is impaired as a result of caffeine usage?

The Court: Before going into that, find out on what ground he made that statement.

The Witness: I made that statement of the examination especially of the one hundred people previously testified about.

Mr. Miller: Mr. Sizer asked the general question of whether this impaired the heart.

The Court: Yes, but before you can go into that, find out whether that opinion of this witness is expressed as the result of his own experience and observation, or from the statements of medical authorities, and if from the statement of medical authorities, you can cross-examine him.

BY MR. MILLER:

Q. I understand your statement to adverse counsel as to the effect of Coca-Cola were based upon your examination of this one hundred people you made the examination of?

A. I said part of it.

Q. Is any part of it based upon medical literature?

A. None whatever.

Mr. Miller: I would like to have his notes filed as Exhibit 1 to his testimony.

The Court: Without objection, that can be done.

Mr. Sizer: What is that?

Mr. Miller: A copy of his examination of the school children.

Mr. Sizer: (After examining) I don't think it is very relevant, but I have no objections to it.

The Court: Without objection, it can be filed.

(The paper referred to was marked as Exhibit 1 to the testimony of Dr. S. R. Roberts, and is in the following words and figures:)

"SUMMARY OF MEDICAL INSPECTION FROM APRIL, 1909, TO JUNE, 1910.

Number children examined	7,907
Number normal	3,671
Number defective	4,236
Per cent. defective	53.5
Number visits to homes, by three nurses	4,043
Number children treated	2,144
Per cent. treated	56
Operations for tonsils and adenoids	421
Number glasses fitted	213
Parents refused treatment	151
Parents promised treatment in vacation	210

Children temporarily dismissed on account of having contagious diseases..... 218

NUMBER AND KIND OF DEFECTS.

Anemia,	214	Adenoids,	1,186
Mal-nutrition,	34	Skin,	90
Parasites,	173	Heart,	151
Seborrhea,	91	Lungs,	87
Eyes,	1,246	Nervous,	26
Glands,	459	Bone,	14
Teeth,	1,957	Ears,	46
Tonsils,	971		

ROBERT J. FORMAD,
recalled for further examination, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Formad, you were examined on a former day of the term?

A. I was.

Q. I will ask you whether or not you have had experience in feeding rabbits drugs, or have seen them fed drugs through a stomach tube, or a rubber tube, such as Doctor Morgan testified was used in feeding some of the rabbits on which you performed an autopsy, and whether or not you have had occasion to examine those same rabbits after they had been fed through a stomach pump?

A. I have.

Q. In the case of rabbits that had received only water or those that received any drugs in so far as the insertion of the tube was concerned, I will ask you whether or not you found any effect deleterious or otherwise, resulting from the insertion of the tube.

Mr. Sizer: I submit that is matter in chief.

Mr. Miller: I submit it is not. They have gone into that fully on cross-examination of our witnesses, and also on the original examination of their witnesses as to what the effect of putting a tube into the stomach would be. They brought that out, not I. I did not inquire about it.

Mr. Sizer: Their witnesses testified about it.

Mr. Miller: They may have asked some of our witnesses about it; I don't know whether they did or not, but on their examination they brought it out that it would be deleterious.

The Court: It is always difficult to tell whether things like that are in rebuttal or not. There was an attempt to establish that the effect was deleterious, and there was nothing to rebut until the claimant introduced its wit-

nesses.

Mr. Sizer: Doctor Morgan stated he killed six rabbits.

The Court: That was subsequently in the process; that was a different thing. I think the examination is proper, though. You may proceed, Mr. Miller.

The Witness: If the tube is not too much of the caliber of the trachea or windpipe, and if the esophagus into which it is inserted does not distend the walls of the tube, it may be inserted with sufficient care without any injurious effects.

Q. Now, in those rabbits where you held the autopsy about which you testified in chief, did you find any deleterious effects or results, or any effects whatsoever, I should say, from the insertion of this tube, anything that was attributable to the insertion of the tube?

A. I did not.

Q. State whether or not in the examination of the brain structure for chromotolysis, the chromotolysis may be overlooked unless what is known as Nissl's test is resorted to, that is the staining or coloring?

Mr. Sizer: I submit that question of chromotolysis was brought out on original examination of Mr. Miller's witnesses, and fully covered on their cross-examination, and fully covered by our witnesses, and I submit that this is going into matters in chief again.

Mr. Miller: I am simply asking whether a man can use a miscroscope and not discover this disease without resorting to the staining tests.

The Court: I don't remember that specific question.

Mr. Miller: And in that connection, they went into the question of chromotolysis in these rabbits, what it affected.

Mr. Miller: I am not asking about that now.

The Court: The question is leading and you are sensitive to leading questions, Mr. Miller, but what is the bearing of the question?

Mr. Miller: I will put it in another form. I want to show that a microscopical examination might be made and unless the Nissl test was resorted to, chromotolysis would not be discovered.

The Court: But what is the bearing of that on the case?

Mr. Miller: Doctor Vaughan and certain other people have testified in a general way to a microscopical examination.

The Court: Is it going to the weight of the effect of the examination of the different witnesses?

Mr. Miller: Yes.

The Court: On that, it is competent, I think.

BY MR. MILLER:

Q. I ask you, Doctor, what is necessary in order to develop or discover the disease of the brain or the trouble known as chromotolysis?

A. In order to see the presence or the absence, or rather, the existence of chromotolysis, they have to have to use stains which are specific for that process. In other words, chromotolysis is a condition depending upon the diminution or the reduction of certain granules which have an affinity to aniline dyes only, and if we were to employ other dyes than aniline dyes we shall not be able to see the reduction of these granules.

Mr. Sizer: As I recall, the witness is simply stating what he stated on his former examination.

The Court: As far as he has gone, it has a very familiar sound, but I don't think he has come to the question specifically asked him.

BY MR. MILLER:

Q. State whether or not that disease of chromotolysis may be discovered by the use of the microscope alone without the dye.

A. It could not be seen or observed unless the particular method of Nissl, the aniline reaction, is used.

Q. That means the use of an aniline dye in connection with the microscope?

A. Yes, sir.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. You mean to say if you put a tube down a rabbit's throat and in his stomach and then pour thick syrup down through that, an ounce every day, and keep him for sixty days with a tube in that condition, that he will thrive and get along just as well as if he didn't have the tube?

A. I simply stated that I did not find any effects produced by the tube.

Q. Do you mean to say in your opinion a rabbit under those conditions will thrive and get along as well as if you leave him in a natural condition to eat his natural food?

A. No, sir. If a rabbit is left at liberty and takes his food under natural conditions, he may thrive better.

Q. If you put him in a cage and let him eat food in the way nature intended him to eat it, won't he do better than if you put a tube down in his stomach and feed him in that way?

Mr. Miller: I object to that question. There is no ques-

tion that any food was given to any rabbit through a tube.

The Court: I will put that question: Is it your opinion, Doctor, that if the rabbit on which the experiment was conducted were regularly fed, does it make any difference to the health of the rabbit whether this additional material is given in the form that he can swallow it, as in the ordinary process of feeding, or does the feeding or administering by tube—does the effect of the administration of this material without the addition of any additional matter through a tube have any effect on him?

The Witness: He could exist and thrive better if he had taken the food in his natural way, but the mere fact that the food or drug or substance has been given with a tube carefully inserted, will not damage his digestive tract in any appreciable amount.

Q. What did you put that tube in his throat for, anyway?

A. Well, for the administration of the substance with which the experiments were made.

Q. And you put the tube in the throat to pour the substance through the tube because you can't get the animal to take it any other way?

A. Yes; the animal would resent the taking of anything but its normal food.

Q. And you say now that it won't affect digestion, the digestive processes, a foreign substance taken into the stomach of animal that objects to taking it?

A. I am not considering the digestive process from a physiological standpoint.

Q. But I am asking you about that. Would it affect the digestive processes to force food into the stomach of an animal through a rubber tube, the kind of a food that he objects to taking?

A. That is the physiological action rather than the pathological.

Q. In other words, you are not able to answer?

A. I do not care to express an opinion on that now.

Q. Now, Doctor, chromotolysis may result from fright, may it not?

A. That depends on what the amount of fright is.

Q. Yes?

A. The mere scaring or frightening of an animal would scarcely produce it.

Q. Do you think you could scare an animal by putting a tube down in its throat enough to give him chromotolysis or produce it?

A. But the animal has been accustomed to that procedure and the drug was put in the first time it was in-

serted. The animal would get accustomed to that procedure.

Q. You don't know anything about the psychic effect on a rabbit's mind of the putting of that tube down his throat?

A. No, sir.

Q. You don't know how bad he might be scared?

A. Animals are handled a great deal in experimental work and they become used to being handled, gentle, of course.

Q. Would you think if you put a tube down a rabbit's throat long enough he might get used to it and it won't scare him?

A. He will; yes, sir.

Q. It scares him the first time you do it?

A. Yes, sir.

Q. Would that produce chromotolysis?

A. If you pick up an animal, the first time it gets scared, too.

Q. But putting a tube down his throat, that would scare him and that might produce chromotolysis?

A. I doubt it.

Q. Do you know?

A. No, sir; I do not.

Mr. Sizer: Then stand aside; come down.

Mr. Miller: Hold on.

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Formad, if the animal, while undergoing the experiment with the tube, in taking the Coca-Cola syrup or drug, or whatever you are experimenting with, continues to eat his normal amount of food in a normal way, does that not indicate that the digestive apparatus of the animal has not been interfered with?

A. It leads us to conclude that the normal functions are going on in a normal manner.

RE-CROSS EXAMINATION,
BY MR. SIZER:

Q. Doctor, suppose you would put a tube down a man's throat and poke hay down that tube into his stomach, what do you think would be the effect of that tube on the man?

Mr. Miller: I object to that. He has only testified in respect to rabbits.

Mr. Sizer: This is in rebuttal to his testimony about pouring syrup into the stomach with a tube.

Mr. Miller: But that is not—

The Court: (Interrupting) I think it is proper cross-examination.

Mr. Miller: I object to the use of the term "hay."

Mr. Sizer: Well, it is a well-known substance.

The Court: Proceed.

The Witness: If you would insert in the tube any coarse material, whether it is hay or any other substance, that coarse material might irritate the mucous membrane.

BY MR. SIZER:

Q. And the man's digestive apparatus, not being accustomed to the assimilation of hay, would not that have some affect on his stomach?

Mr. Miller: I object to that question because he is not a witness as to that subject, your Honor.

The Court: I don't think—

Mr. Miller: (Interrupting) And because it is leading.

The Court: I don't think it is leading, but I think it is a foreign matter. You are getting on to the affects of a foreign substance.

Mr. Sizer: Well, syrup is foreign to the animal.

The Court: As to the tube affect only, that was asked.

BY MR. SIZER:

Q. I will ask you this question: If it is not true that the brain cells are breaking down and disappearing all the time in the ordinary processes of life.

A. A certain number of cells in all parts of the body may break down, but that condition would not be in a sufficient amount as we find in chromotolysis proper.

Q. Now, then, would not that breaking down process give an indication of chromotolysis in some of these cells?

A. It would take place in such inappreciable amounts that it would be difficult to determine.

Q. Now, Doctor, how do you know it would take place in very inappreciable amounts? This was a very refined test you referred to in your examination in chief, was it not, this Nissl's test—I believe that was the test.

A. Nissl's test—I have used that test for over fifteen years in demonstrating to my classes the normal appearance of the Nissl's granules, when there is no chromotolysis present.

Q. You are familiar with Stewart's Manual of Physiology, are you not?

A. In a general way. I am not a physiologist.

Q. That is a standard authority, is it?

A. Yes, I believe it is.

Q. Well, I want to read you this with respect to chromotolysis—

The Court: Find out what his opinion on direct examination was based on before you read him any authorities.

BY MR. SIZER:

Q. Now, is your opinion given in response to questions on direct examination as to the existence of chromotolysis, the tests by which it can be determined, and the causes to which it may be due, based on the reading of the literature?

A. It is largely based on my personal experience and partially upon the reading of literature.

Q. Partly on literature?

A. Yes, sir.

Q. Now, I will read you this—

Mr. Miller: I object to that, to any physiological book. He said he was not a physiologist, but a pathologist, pure and simple—and he did not qualify in trying to give us an opinion in chief on that.

Mr. Sizer: I do not know the exact distinction between a physiologist and a pathologist, but I submit—

The Court: Have you any specific authorities on the question of chromotolysis and the tests to be used? If you have, you may submit it.

Mr. Sizer: This refers now to the causes that may produce chromotolysis and I want to read him this clause.

The Court: He was not examined in chief on those clauses, as I recall, and certainly not in this re-examination. The only question is as to the test, the affect of the test.

Mr. Sizer: The purpose of his examination was to intimate or lead us to the inference that the presence of chromotolysis might be due to the fact that they were giving rabbits Coca-Cola.

Mr. Miller: Well—

The Court: (Interrupting) But, as I understand it, the witnesses for the claimant did not apply the proper test. That was the point; it was attacking the weight of their tests on that point, if they used the Nissl test—

The Witness: Yes, the Nissl test.

Mr. Sizer: Well, if his testimony is limited to that point we do not care to go into it.

The Court: That is the way the Court understood and the point on which it was admitted.

Mr. Miller: Well, unless you gentlemen wish to recall Doctor Formad, I would like to excuse him to catch a train.

Mr. Sizer: Let him go.
(Witness excused.)

DR. WILLIAM SALANT,
recalled in rebuttal, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Salant—

The Court: Before we proceed further, it seems to me there should be made a record in this case of the agreement made by counsel yesterday in the presence of the Court in reference to the samples of Merchandise No. 5. It was agreed and I direct the stenographer to state it was, on yesterday agreed by counsel for the Government and the counsel of the claimant, in the presence of the Court, after court adjourned, that the representatives of each side might take samples of Merchandise No. 5 from the receptacle filed as an exhibit to the evidence of—I forget.

Mr. Sizer: Doctor Mallet.

The Court: To the evidence of Doctor Mallet, for the purposes of examination.

Mr. Miller: And that was done by each side.

The Court: I wanted to make a note of it and have it appear in the record. You may proceed.

BY MR. MILLER:

Q. Doctor Salant, state what was the percentage or solution of caffeine which you used in the administration of caffeine to these rabbits in which you detected sugar in the urine.

Mr. Sizer: I object to that; that is examination in chief.

Mr. Miller: That is brought out in response to the inquiry of their witnesses as to whether or not there is a difference in affect of caffeine when taken or administered by mouth or subcutaneously injected, and I simply propose to prove by him what the solution was—

The Court: Well, I think it is a matter in chief, but I think the matter has been inadvertently omitted and it is in the discretion of the Court to permit it. I have not ruled very closely—I never do on these matters in examination in chief—and I think counsel has not purposely withheld anything. I will allow a rejoinder on the part of the claimant to that.

Mr. Miller: Just read him the question.

(Question read, as follows: "Doctor Salant, state what

was the percentage or solution of caffeine which you used in the administration of caffeine to these rabbits in which you detected sugar in the urine?")

A. Two per cent. aqueous solution. Two grams of caffeine to one hundred cubic centimeters of water.

BY MR. MILLER:

Q. State whether or not xanthine as such enters into the chemical anatomy of the cell of the human.

A. I should say not. It is a product of the processes of metabolism and I would not consider it as a part and parcel of the cell, although it may be found right straight along in the cell.

Q. Now, I will get you to state if you heard the examination of Doctor Haines as to the behavior of the pigs to which he administered one-sixtieth of a grain of caffeine, or one-fiftieth of a grain of caffeine, whatever it was. The pigs, in the first instance.

A. If I recall it accurately, he showed some symptoms of nervousness, as he called it—

Q. Now, assuming that the caffeine was administered, as he states, I will ask you to state from your experience what that restlessness would be attributed to.

A. I cannot see any other cause than the caffeine.

Q. I will get you to state whether or not caffeine is of chemical constitution.

A. I didn't understand the question.

Q. I will get you to state whether or not caffeine is of chemical constitution.

Mr. Sizer: What did he say?

The Stenographer: He said: "I didn't understand the question."

Mr. Sizer: What was the question?

(Thereupon the question was read, as follows: "I will get you to state whether or not caffeine is of chemical constitution.")

The Witness: I do not understand that; that is meaningless to me.

BY MR. MILLER:

Q. The question I have in mind is based on the definition as given by Doctor Vaughan, and that was as to what a poison was.

A. Yes.

Q. And that was that it was a substance that when taken in the body, on account of its chemical constitution does so and so, and I ask you whether or not caffeine is a chemical constitution.

A. Well, caffeine is a chemical; yes.

Q. What did you say?

A. Caffeine is a chemical substance, if that is what you mean to ask.

Q. Now, based on your reading, observation and experiments, state whether or not the muscles of the human work more smoothly or more effectively after administration of caffeine.

A. I do not know of any reliable experimental data.

Mr. Sizer: I object to that. This witness has not shown, in the first place, that he has ever made any experiments on human beings, and has not qualified himself to testify as to that.

Mr. Miller: He qualified in chief that he had made experiments upon animals—he does not qualify now.

The Court: Experiments upon human beings?

Mr. Miller: No; on animals.

The Court: You are asking him about experiments on human beings.

Mr. Miller: I asked him whether, based on his reading, experimentation or observation, there is any foundation in his opinion for the statement that the muscles work more smoothly, or effectively, after the administration of caffeine. Now, I do not think it has been disputed by anybody that animals are resorted to for experimentation as to effects of caffeine on humanity, and of course in part he is reasoning by analogy when it comes to forming an answer, and I am asking this man who has studied its effects for over two years and nothing else, and basing his opinion in part on what he has read, on literature.

The Court: Well, that reading of literature—that is very general, the way you have asked him. Ask him to state the kind of literature.

BY MR. MILLER:

Q. I will confine that to medical and scientific literature, I will say scientific literature on the subject.

A. I do not know of any reliable information indicating that the taking of caffeine improves the quality of muscular work or as to the smoothness of the muscular work.

The Court: That was not the question that was asked you, but your opinion based on that information and experiments and reading and literature—that was what was.

The Witness: I have no reason to suppose that it does.

Mr. Sizer: Now, I move to exclude that answer, your Honor.

The Court: I do. It does not suppose one way or another, and it does not indicate anything.

BY MR. MILLER:

Q. I will ask you, then, again to state your opinion based on your experiments and reading of scientific literature on the subject of caffeine and its affect on the human system, whether the muscles work more smoothly and effectively after the administration of caffeine.

A. I do not know whether they do work more smoothly or not.

Q. Have you ever seen or known of a case where they did?

Mr. Sizer: I object. The witness says he does not know; he is very candid about it.

Mr. Miller: I submit I had a right to follow the line of testimony yesterday as to what came under his observation.

The Court: Yes. If the witness said he had known he could give it, but he says he has not any opinion.

BY MR. MILLER:

Q. Do I understand you, Doctor Salant, that based on your reading and observation you have no opinion on the subject?

Mr. Sizer: I object to counsel cross-examining his own witness.

The Court: The witness has stated that he did not know about it and had no opinion to express. That is the substance of his examination as the Court understood it.

BY MR. MILLER:

Q. I will ask you this question, if you have seen, read or known of any scientific literature dealing with that subject.

Mr. Sizer: I object to that.

The Court: That is immaterial. If he has not read it, he is not qualified to express an opinion; if he has read it and is not prepared to express an opinion, it is immaterial to the case also.

BY MR. MILLER:

Q. Have you not performed any experiments with a view of ascertaining how that is?

A. I have not.

Q. You have not performed any?

A. I have not performed any experiments on that point.

Q. Now, I will ask you whether or not urea is a normal constituent of the human body.

Mr. Sizer: That is the most familiar sound I have heard this morning. That has been gone into by every

expert on the stand, as to whether urea was a normal constituent of the human body.

Mr. Miller: I say again that I did not ask this witness or any of my witnesses such a question. I do not deny that you asked yours.

The Court: What is that to rebut?

Mr. Miller: This is to rebut the answer of one of their witnesses who said that caffeine was not a poison because it was broken up into xanthine and that xanthine was a normal constituent of the body.

The Court: You have not asked him whether xanthine was a normal constituent of the body.

Mr. Miller: No, but I am asking about the urea, and they were permitted to ask about certain other things, and even read from foreign to say whether they were poisons, and I am trying to follow the ruling made in that regard.

The Court: I don't see what you are referring to. The point is to contradict the witnesses who stated that xanthine was a normal constituen of the body.

Mr. Miller: That is what I understood Doctor Vaughan to state.

The Court: You may ask this witness, then, whether xanthine is a normal constituent of the body.

Mr. Sizer: And he has already asked him.

Mr. Miller: I asked him if it were a normal constituent of the cell, and he said it was not.

BY MR. MILLER:

Q. State whether urea is formed from xanthine, or what xanthine forms, that is, the xanthines in the body, what are they converted into?

A. Uric acid.

Q. By what process?

A. By process of oxydization, by adding one more molecure of oxygen.

Q. State whether or not they are brought in contact with the urea?

A. What is brought in contact with urea?

Q. Whether or not they are transformed or converted into urea?

A. It may be, I do not know; it is not known definitely.

Q. For the purpose of getting this question into the record, I want to ask this witness, who is a pharmacologist, whether urea is a poison or not.

The Court: And the question is overruled and the answer excluded. That might be matter in chief, but is not proper on rebuttal.

BY MR. MILLER:

Q. Now, as to the effects of caffeine stimulation, if there is any chart or representation on the board that was put in evidence by any of the witnesses which shows the effects of it, and in your opinion shows whether or not it is beneficial or deleterious, just take the chart and point out what it shows with respect to depression and stimulation and what your opinion is based thereon.

A. On that chart (pointing to chart on blackboard) appear the red line, which shows the author's idea of the effect of caffeine on the muscles, that is, the work performed by the muscles under the use of caffeine. The second line, the green line, is the work the muscle performs without caffeine, or the control, so to speak. Assuming this author's view, it means that the red line represents the work done by the caffeinized muscle and where it crosses here, it means less work done by the normal muscle. In other words, as compared with the normal muscle, there is a definite distinct depression, lasting for some time, but they finally run together. That is what those two lines mean.

Q. Assuming that chart to be true and correct, state whether or not depression follows the stimulation.

A. If this chart is true, it certainly does. It shows nothing else, to my mind.

Q. State whether or not you have had occasion to observe the effects of the administration of caffeine solution, or other drugs, on rabbits through a rubber tube, and if so, what the effect is of the insertion of the tube on the rabbit.

A. I have administered salt solution by mouth through a rubber tube to a rabbit for fourteen or fifteen days, and as far as I could see, there was no effect whatever. It don't show any symptoms of nervousness or irritability or any difference in weight. Then I also performed experiments with other drugs. I could mention the drug, but I prefer not to.

The Court: You need not. The only question is as to the effect of the tube.

A. And they were never killed by the tube.

Q. In your opinion, in the administration of these drugs by tube, is there a harmful result to the anatomy of the rabbit, that is, its insides?

Mr. Sizer: I object to that question. He has already stated his observations as to the effect. Now, Mr. Miller asked him whether it was harmful or not.

The Court: He has already stated that he saw no effect.

BY MR. MILLER:

Q. To probably how many rabbits have you administered substances through rubber tubes?

A. Not caffeine, but substances altogether?

Q. Substances altogether.

A. Between fifty and sixty in the last year, and I don't know how many before that. That was the amount in the last year.

Q. Now, if a drug like caffeine, or any other drug, would be administered to a pig by taking the pig up and squeezing him at or near the throat and dropping the medicine into his mouth, state whether or not in your opinion that would be a proper method of experimentation, and if not, tell why not.

A. I do not regard it as an accurate method of administration.

Q. Why not?

A. You really do not know whether it reaches the stomach or not. That is the reason I made my experiments with a tube; that is, I administered the drug by a stomach tube; I know it gets there.

Q. From your experience and observation of others in the administration of aqueous solutions, I will ask you whether or not the tube is resorted to?

A. Yes, a great many people I know experiment in that way—competent people.

Q. What effect does the administration of caffeine have on dogs or guinea pigs as to inducing thirst?

Mr. Sizer: That don't sound like rebuttal testimony to me.

The Court: I do not see that it is in rebuttal.

Mr. Miller: They brought out in one or two instances that the pigs had increased in weight, and I want to show that if they drink more water, more of it became absorbed in the cell, and as a consequence, they might take on weight.

The Court: You can proceed.

The Witness: I know that after the administration of caffeine they become very thirsty and they drink a great deal of water.

BY MR. MILLER:

Q. Now, if an animal had his thirst increased in that way and he increased in weight, would that or not prove that the solid flesh or the healthy animal had been increased?

A. Not necessarily so. That would depend upon many factors.

Q. What other factors do you speak of?

A. It would depend on how much he would urinate, how much he would perspire, the condition of his alimentary canal, and also whether or not the flow of bile and other secretions of the stomach and intestines were increased. There are any number of factors.

Q. When you administered caffeine through a tube to rabbits, or when you inject it, I will ask you whether or not there was any difference in qualitative effect.

A. None whatever, absolutely none as far as human experience could show.

Mr. Sizer: I think that was gone over in the examination in chief.

Mr. Miller: I submit it was not. I certainly did not ask him about it in chief.

Mr. Sizer: The mere fact that he didn't ask a certain question does not make it material or competent on rebuttal.

The Court: I will allow the question and answer to stand.

BY MR. MILLER:

Q. Now, as respects rabbits and man, what is the difference between the two as to the consumption of herbs or herb-life. What is natural as to the one and as to the other?

The Court: I think the jury understand that.

BY MR. MILLER:

Q. I will ask you whether or not a substance taken from an herb like caffeine would be, in your opinion, less deleterious to man than to a rabbit, and if not, why not?

Mr. Sizer: That matter was all gone over in chief.

Mr. Hirsch: Oh, let him answer.

Mr. Miller: I am sure I did not ask this witness or any other witness about it. I had read the testimony to see.

The Court: There was an attack made on the experiments on the ground of the difference in the feeding habits of animal and man by witnesses for the claimant, and I take it that the Government wants to rebut that. Is that it?

Mr. Miller: Yes.

The Court: Proceed.

The Witness: What is meant by that, I suppose, is that deleterious tolerance of man and also of the animals to certain drugs, especially caffeine, in this case. It is pretty well known that lower animals are far more resistent to alkaloids and drugs of vegetable origin than human beings. We know, for example, that some animals, the hedgehog, is immune to strychnine.

Mr. Sizer: We object to the hedgehog. He has not been brought in here before.

The Court: There are too many points about that for us to go into.

BY MR. MILLER:

Q. I will ask you if there is, in your opinion, any reason to suppose that the rabbit would be less tolerant of caffeine or any substance that had a vegetable origin than man would be, and if not, tell why.

Mr. Sizer: I object to that.

The Court: The objection is sustained.

Mr. Miller: He supposes—

Mr. Sizer: I object to any supposes.

The Court: The witness has given his opinion —

Mr. Miller: I am not going to ask anything about any supposition.

Mr. Sizer: I want to submit this further objection as to the respective tolerance of rabbits, guinea pigs, man, as that was gone into by several witnesses on behalf of the Government and they testified that they based their testimony largely on the Allard and Zenetz cases, indicating the lethal dose, and now they are going over the same ground.

The Court: The general opinion as to the respective tolerance of rabbits and other animals to caffeine in proportion to man is a matter in chief and it was gone into.

Mr. Miller: But I am not asking about that.

The Court: But the specific objection to the test, on the ground that the difference of digestion habit of man and other animals with reference to food, may be gone into, because there was an attack made on that very ground by one or more of claimant's witnesses, but it would be limited to the witness' opinion as to the value of the tests with rabbits and other similar animals, as based on the difference in the regular diet of the animals and the diet of man. It should not be embraced in a general question.

BY MR. MILLER:

Q. Now, based on the general habits of the rabbit—

The Court: In reference to diet.

Q. —in reference to diet, state whether or not, because they do not eat meat, there is any reason, in your opinion, why they would be able to take care of caffeine for that reason, or whether it would be a tolerant substance to their diet.

A. Being herbivorous animals—

The Court: The objection was made because the rabbits are vegetarians, and man was called an omnivorous

animal, that the tests with caffeine on a rabbit would be misleading. Now, you may ask this witness whether there is anything in that difference of diet, in his opinion, to make the tests inaccurate.

Mr. Sizer: That is not exactly our objection, but it was based on the fact that caffeine is not an article of the animal's ordinary diet.

The Court: That has been proven several times.

BY MR. MILLER:

Q. Now, based on the customary diet of animals in their normal condition, state whether or not there is, in your opinion, any reason or support for the ground that because they are herbivorous animals an experiment on them with caffeine would be misleading as respects humanity, and if not, why not?

A. I do not consider it misleading.

Q. Why not?

A. Unless by misleading is meant that they take larger doses, they are more tolerant than man on account of their habits and ways of life.

Q. Why habits?

A. They are herbivorous animals and must of necessity take in poisons of a vegetable origin, thereby coming more or less immune, and can take larger quantities.

Q. Is caffeine or not of vegetable origin?

A. Certainly.

Q. I will ask you to state with respect to metabolism whether or not the same results obtain as to body protein metabolism where persons have brain disease, as compared with those who have not?

Mr. Sizer: I do not know whether that was gone into in chief or not; if it was, I object to it.

The Court: I don't see to what it applies.

Mr. Miller: It was shown by Doctor Emerson, I think, that he performed some experiments on certain persons for the purpose of ascertaining as to protein metabolism. Now, I am trying to show that these same results might have obtained, so far as protein metabolism was concerned, even though the brain or heart might be deranged as the result of metabolism.

The Court: Did Doctor Emerson express any opinion on protein metabolism — did he show there were any changes in the brain?

Mr. Miller: No, sir, he did not kill the man to see whether there were any changes.

The Court: Then it don't rebut anything.

Mr. Miller: No, but I asked him on cross-examination

whether that would show—I think I did. I can't carry everything in my head, but I think I did.

The Court: I don't know of anybody who carries any more in their head than you do.

Mr. Miller: Your Honor overwhelms me with the compliment. I am not anything but a-b-c-darian in this case yet.

BY MR. MILLER:

Q. Now, I will ask you whether or not you have read the testimony of Doctor Wesener, and whether you heard it given in open court?

A. Yes, sir; I have read it and heard it both.

Q. If the experiments of Doctor Wesener were open to any objection from a scientific standpoint, first as to the matter of the control animals, I will ask you to state why.

A. The way to carry out an experiment is to control each individual animal, that is to say, if you give him a substance, caffeine in this case, you should handle him as near as possible before you give him the drug as you do when you give him the drug, and you may check it up more by having a group of other animals similarly treated but not receiving caffeine. That would be an adequate way of checking up or controlling the experiment with the substance. The animal should be observed very closely before, during, and if possible, after the giving of the drug. Any other method is positively inadequate.

Q. State whether or not in your opinion the experiments as conducted and reported by Doctor Wesener were adequate or accurate tests as to the effects of caffeine on the stomach of the rabbit or on the reaction of the rabbit.

The Court: I intend to limit the criticism of the method employed — the logical bearing of these experiments, on the case, is for the jury and not for the witness. The question is a little too broad and it might lead to that result.

BY MR. MILLER:

Q. If Doctor Wesener's experiments were open to any other criticism that is objectionable —

The Court: Open to objection in giving resultant facts for which they are offered in evidence.

BY MR. MILLER:

Q. If they are open to objection and giving resultant facts which he testified to, then testify what they were.

A. Well, the objection to Doctor Wesener's experiments is that they were entirely too few; he ought to have performed three experiments with caffeine so better results could be obtained as results might very easily be ascribed

to chance.

The Court: What do you mean by that ——

The Witness: To chance.

Mr. Sizer: That is a mere matter of opinion; it is not an expert question — the jury can see as well as he can ——

The Court: I don't know if he bases his opinion on the usual and customary experiments of this sort as to number, if there is a standard of that sort it would be competent, the custom scientifically.

BY MR. MILLER:

Q. Are you basing that opinion you have given as to the number of his experiments being too few, Doctor, — or what are you basing that statement on?

A. I base it wholly on my own experience because the main feature about experiments with caffeine that struck me most forcibly is the difference of individuals in their resistance to the drug. There are so many features which enter into consideration with a few animals that means practically nothing.

Mr. Hirsch: Now, he says "individuals." He says animals were experimented on and nothing except the lower animals — now he is criticising experiments on lower animals, and then he has gone to individuals.

The Witness: I mean individual animals, animal individuals.

The Court: Yes, he means that.

BY MR. MILLER:

Q. State any other criticism, that is, any other opinions that suggest themselves to you with respect to the results and effects to which Doctor Wesener testified that would lead you to the conclusion that the method of administration was either not scientific, and inadequate from a scientific standpoint.

A. I covered that this morning in regard to the method of administration. I do not suppose it is necessary to repeat it.

Q. That was in the case of Doctor Haines' pigs?

A. Yes, sir.

Q. State whether or not young animals like those that Doctor Wesener experimented with were or not, the majority, three or four, whatever it was — at any rate, whatever the number was, would be in a growing state ——

Mr. Hirsch (Interrupting): There is no evidence to show that the animals he experimented on were young animals.

Mr. Miller: I mean to limit to the number ——

The Court (Interrupting): If there is, the jury will judicially know that a young animal is gaining flesh without proof.

RECROSS-EXAMINATION,
BY MR. HIRSCH:

Q. What solution was that you said you gave of caffeine?

A. Two grams to one hundred cubic centimeters.

Q. And if you put in another particle of caffeine in that solution it would have gone out of solution?

A. Yes, sir, exactly, that would be the temperature ——

Q. The highest concentration?

A. Yes, sir, some temperature is all ——

Q. What experiments have you performed to show that xanthine is reduced to uric acid and uric acid to urea?

A. Well, I didn't say I had performed any experiments with xanthine.

The Court: Didn't this witness say he didn't know anything about that?

Mr. Hirsch: No, he went into it.

The Court: But when he got to the uric acid feature of it, I thought he said he didn't know.

Mr. Hirsch: The witness said that ——

The Witness: Xanthine is oxydized to uric acid.

BY MR. HIRSCH:

Q. Xanthine is oxydized to uric acid and none of it to urea?

A. It is doubtful if any.

Q. You don't know?

A. No, sir.

Q. Taking the chart that you refer to ——

A. Yes, sir.

Q. Does not that chart show that the average work done by the muscle that was put in caffeine, the total done by the muscle put in caffeine, was greater than the total work done by the muscle not put in caffeine?

A. Yes, the total work.

The Court: That chart as to the muscle being put in caffeine, did I admit that?

Mr. Sizer: No, that was not ——

The Court: I excluded everything about the direct action of caffeine on the muscle.

Mr. Sizer: This was not in respect to the direct application.

The Court: He said a muscle put in caffeine. I thought I excluded everything of that sort.

Mr. Sizer: That was this experiment that Doctor Wood

— in which he had given caffeine to a frog and then tied or bound one of the muscles so that caffeine could not get into it and could come up into the other.

Mr. Hirsch: Yes.

The Court: All right.

BY MR. HIRSCH:

Q. Besides that, Doctor, does not that chart show that the caffeine muscle was in as good condition at the end of the experiment as the muscle that had not been given caffeine?

A. Yes. I would like to correct that; you mean, ultimately?

Q. Well ——

A. What do you mean by the end of the experiment — when it ended?

The Court: Yes, when it ended there.

Mr. Hirsch: Yes.

The Witness: Yes, sir.

BY MR. HIRSCH:

Q. Did you ever feed rabbits, through a tube, milk?

A. Sir?

Q. I say, did you ever feed rabbits or use a tube in feeding milk to rabbits and note the effects?

A. I did not.

Q. You say the reason Doctor Vaughan's experiments and Doctor Haines' experiments were faulty because you could not tell where the caffeine went that was given by way of mouth without the tube ——

A. You could not tell whether all the caffeine reached the stomach.

Q. Where would it go to if it didn't reach the stomach?

A. They may spit it out.

Q. You say they may spit it out?

A. No, sir, I don't know ——

Q. Do you say that guinea pigs and rabbits spit?

A. No, I used that as a common expression. I would like to have an opportunity to explain that.

Q. All right.

A. It might very easily, the local application of caffeine solution might very easily and very frequently and in many cases cause increased salivation — I mean, an increase of saliva, which might ooze out at the mouth, that is what I mean by spitting.

Q. Do you think feeding rabbits with caffeine as Doctor Vaughan and Doctor Haines said they fed them, that all of the caffeine did not go into the stomach and get into

the blood?

A. I did not say all of it did not. I don't know how much of it would not. Possibly some of it did not reach the stomach.

Q. Is it a possibility?

A. Yes, sir.

Q. Now, Doctor, you stated in reference to tolerance that it is pretty well known that the lower animals are more resistant than man. How is it pretty well known?

A. Resistant as to what?

Q. As to caffeine — we are not talking about anything else now.

The Court: I meant to exclude everything except the interrogation as to the diets.

BY MR. HIRSCH:

Q. Isn't it a fact that caffeine is more closely related to meat than to ordinary diet taken by a rabbit?

A. In what way?

Q. The xanthine bodies.

A. Caffeine is not xanthine.

Q. It is trimethylxanthine.

A. Yes, sir, but it is not xanthine.

Q. Is it more closely related to meat?

A. Yes, sir.

Q. Than to food ordinarily taken by rabbits and guinea pigs?

A. Yes, sir.

Q. How many experiments did you perform to find out as to the demethylization of caffeine?

A. I don't remember.

Q. Don't you remember how many rabbits you experimented on?

A. For what?

Q. For the purpose of finding out about the demethylization of caffeine.

A. I didn't say that I performed any to find out about the demethylization — I didn't say that I did that by injecting it into the rabbits. I never made such a statement.

Mr. Sizer: Did your Honor say we could not go into the question of the tolerance proposition that the witness testified about?

The Court: I excluded his answer, or I intended to exclude it in so far as it was brought out on re-examination to meet your objection rising out of the diet.

REDIRECT EXAMINATION,
BY MR. MILLER:

Q. I will get you to state whether or not trimethyl-

xanthine occurs in many forms of plant life.

A. Yes, sir.

Q. Trimethylxanthine?

A. Yes, sir.

Q. It occurs in many forms of plant life?

A. Yes, sir.

Mr. Miller: Now, then, there is one question that I perhaps should have asked on his direct examination, as to the experiment of Doctor Wood, and I overlooked it, and that is, when caffeine was given by Doctor Wood, in what kind of a solution was it given and how in your opinion should it have been given in order to have had a determinative or accurate test?

A. It was given dissolved in water and injected in solution. It should have been dissolved in a physiological salt solution.

Q. State whether or not that salt solution, as you term it, is the usual and customary one for making experiments of that kind.

A. That is the usual and proper way to do it.

Q. And why is that, Doctor Salant?

A. Because if the solution injected is hypertonic, it has not got the same thickness as the blood, it will cause a destruction of blood cells — as distilled water, for example, injected directly into the blood will cause a destruction of blood vessels, technically known as hemolysis.

Q. Is caffeine as such ever a meat constituent?

A. No, sir.

Q. Is it or not a plant constituent?

A. Yes, sir.

Q. In many forms of plant life?

A. Yes, sir, it is.

Q. State whether or not it is always a constituent of plant life.

A. Of certain plants; yes, sir.

RECROSS EXAMINATION,
BY MR. HIRSCH:

Q. Does caffeine exist in any plant eaten by the rabbit at all?

A. I know it is in some plants, but I can't answer that question.

Q. Doctor, with respect to this injection of a salt solution: Suppose you saturated the salt solution?

A. Saturated one?

Q. Yes.

A. It will affect very seriously the blood corpuscles. I can answer you more accurately; it will make the blood

corpuscles shrink instead of swell.

Q. Depending upon the degree of the salt solution?

A. Yes, sir.

Q. And the effect upon the blood?

A. I answered you and I cannot answer you any more.

REDIRECT EXAMINATION,
BY MR. MILLER:

Q. When you spoke of the normal salt solution — do you have reference to this intense kind that Mr. Hirsch speaks of?

A. I meant an eight-tenths of a per cent. of salt solution.

Q. What kind of effect does the solution have on the blood cells?

A. It keeps the cells in their natural condition — that is why we call it the physiological salt solution.

Mr. Miller: Is Doctor Wert in the house?

Mr. Sizer: Yes.

Mr. Miller: I will ask Doctor Wert to come around.

(Witness excused.)

DR. B. S. WERT,
recalled for further examination, testified as follows:

RE-CROSS EXAMINATION,
BY MR. MILLER:

Q. Doctor Wert, have you or not been called on to treat patients who were afflicted or addicted as a result of Coca-Cola, taking the history into consideration as a part of your statement on which you base your opinion?

A. Have I been called to treat ——

Q. Have you been called to prescribe for men who used Coca-Cola?

A. Yes, sir, there have been cases.

Q. Have you been called to prescribe for and have you forbid the use of Coca-Cola?

A. Yes, sir; there have been cases that I have forbid its use.

Q. State whether or not some of these were children.

A. Why, I don't remember of having been called to treat children. I frequently advise parents not to give children coffee, tea or Coca-Cola.

Q. And why is that?

A. Well, I have thought — I thought that it made them nervous, to some extent.

Q. You don't think that was beneficial to health, do you?

A. Well, I base my opinion on this, Mr. Miller: That a child that would take a glass of Coca-Cola or would drink a cup of coffee, he would get a great deal more caffeine in proportion than an adult would, taking it weight for weight, — or age for age.

REDIRECT EXAMINATION,
BY MR. SIZER:

Q. These cases, Doctor, are cases in which you were called on to treat persons in some diseases or illness?

A. Yes, sir; sure.

Mr. Miller: I object to that.

The Court: It is sustained.

BY MR. SIZER:

Q. Were you ever called on to treat or prescribe for children who were not sick?

A. No, sir, who did not think they were sick.

Q. You frequently when you were called on to prescribe for children or the sick, you forbid the use of various articles you would not forbid the use of to well persons?

A. That is true.

(Witness excused.)

Mr. Miller: Now, Mr. Sizer, are you willing to admit that Coca-Cola did contain cocaine back in 1902?

Mr. Sizer: We will admit just what Judge Candler testified about it.

Mr. Miller: Then we will call Doctor Crampton.

DR. CHARLES A. CRAMPTON,
called as a witness in rebuttal herein, of lawful age, being first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Crampton, what is your age?

A. Fifty-three.

Q. Where do you reside?

A. Washington, D. C.

Q. What is your profession?

A. Chemist.

Q. How long have you been engaged in that profession?

A. About twenty-eight years.

Q. Have you any connection with the Federal Government?

A. Not at the present.

Q. Had you any connection with the Federal Government in 1902 or 1903?

A. I did.

Q. I will get you to state if at that time you had occasion to analyze Coca-Cola syrup.

A. Yes, I did.

Q. Now, state whether or not you detected any cocaine in Coca-Cola syrup, and if so, how.

A. I detected cocaine in some samples of Coca-Cola syrup that I examined in 1902.

Q. How did you detect the presence of cocaine, Doctor?

A. By the extracting of the syrup with solvents and evaporating off the solvent, purifying the extracted product and detected the effect on the nervous sensitiveness of the tongue, touched it to the tongue.

Q. What was the effect when you brought it in contact with your tongue?

A. It produced a class of numbness which existed for some time.

Q. State whether or not that is a test for cocaine.

A. It is.

Q. And when was that, did you say?

A. 1902.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. Doctor, you were not able to determine any quantity of cocaine, were you, yourself?

A. No, sir; I did not determine the quantity.

Q. Well, it was the mere minutest trace, if any there was?

A. It was a small trace; yes, sir.

Q. Didn't you testify in the Rucker case, that it was less than one four-hundredth part of one per cent.?

A. No.

Q. Well, did you undertake to testify to any quantity at all?

A. I did not.

Q. And the only way that you were able to discover what you thought was cocaine was by evaporating a large quantity of the syrup down and then putting it to your tongue, or putting the residue to your tongue?

A. No; I extracted the syrup with a solvent and evaporated that down and purified the product to some degree and then made the test.

Q. Now, how much of the syrup did you have to use in order to be able to get that result?

A. I don't remember now. It must have been less than a quart because I had a quart of the sample — something less than a quart.

Q. Something like a quart?

A. It was considerably less than a quart that I used for this extraction.

Q. Doctor, was that test that you stated — would it determine the existence of cocaine conclusively?

A. I think it would; yes, sir.

Q. Are there or not a number of other substances which might have given the same results that you reached?

A. I don't think many of those in existence at that time.

Q. For instance, aconitin?

A. I don't think aconitin would have given the same result.

Q. How about eucain?

A. Eucain was not brought out at that time.

Q. You mean, the people did not know about it, it was in existence then the same as now?

A. Yes, sir; but it had not been isolated.

Q. But would not eucain have given that same result that you have testified to?

A. Well, it might have.

Q. As a matter of fact, don't you know it does give that same result?

A. Yes, sir; these alkaloids which produce this local anesthesia have developed since that time.

Q. So that the tests you have told about do not definitely or absolutely determine the presence of cocaine in any quantity?

A. In connection with the testimony and the coca leaves that have been used, the coca leaves were the only source known at that time under the name of cocaine — which had this peculiar property of local anesthetizing, and it gave that test, by applying it to the tongue.

Q. Well, aside from the collateral facts and testimony in that case, the tests you referred to would not determine cocaine to the exclusion of certain other substances?

A. It was the best I knew at that time.

Q. Why would it have been so any more than now?

A. Because since that time other substances have been developed which give the same result. These substances were not developed then.

Q. Well, they were in existence at that time?

A. They were not developed.

Q. I know, but they were in existence?

The Court: It is not a question as to the giving of your opinion at that particular time, but they are asking you whether you can now from the tests that you made and experiments that you made whether it was cocaine or some-

thing else, the tests as considered now from present knowledge.

The Witness: I am speaking of the test that I made at that time.

Mr. Sizer: I am asking you about it now in the light of your present knowledge ——

BY MR. SIZER:

Q. Is it true that the test is not a conclusive test, the one you used?

A. Well, I would say that I was making the test, the best test that I could resort to ——

Q. I say, in the light of your present knowledge, is it true that that test is not a conclusive test?

A. It is not at the present time.

Q. Did you make any other tests at that time?

A. I made more or less complete analyses of the product at that time.

Q. Did you make any other test for cocaine at that time than the one you have testified about?

A. No, sir.

Q. Was there or not a better test at that time that you could have resorted to?

A. No, sir.

Q. For instance, the eye test?

A. Well, that was a similar test to the one I made, a little more delicate.

Q. Would it have more certainly ——

The Court (Interrupting): It is a question of accuracy of that test.

The Witness: All right.

Mr. Sizer: I believe that is all we care to ask him.

REDIRECT EXAMINATION,
BY MR. MILLER:

Q. This eucain that has been referred to, state whether or not that is a derivative of cocaine, Doctor.

A. Yes, I think it is.

Q. I will get you to state whether or not aconitin causes a burning before the numbness takes place.

A. How was that?

Q. I say, does the substance that is called aconitin cause an intense burning before numbness begins?

A. I can't say as to that.

Q. Will you kindly give the stenographer there what analyses that you made of the Coca-Cola? And the other substance that you found in the Coca-Cola in the various tests that you made at that time? I do not mean to keep

your private data, but let the stenographer keep it during the day while you are here and file that as Exhibits 1, 2 and 3, etc., to your deposition.

Mr. Sizer: I object to that. The only question that is open to this witness on rebuttal as I understood it, is as to the cocaine proposition.

Mr. Miller: I submit if I can show the constituents have been changed I am contradicting their proposition that there has been no change in the manufacture or the use of ingredients for the last twenty years.

The Court: I think it is competent on that point.

Mr. Miller: And if adverse counsel wants to examine you about it I will hand them to him.

Mr. Sizer: I object.

The Court: I think the objection is well taken.

Mr. Miller: I would be glad to pass them to adverse counsel. Have you copies of the analyses you made at that time?

The Witness: I have a copy of the report I made to the Commissioner of Internal Revenue at that time.

BY MR. MILLER:

Q. Does it or not contain your analyses of this product in connection with other ingredients that were in the products at that time?

A. Yes, sir.

Mr. Miller: I do not care to ask him more than that, but I can pass them to adverse counsel and they can ask him.

Mr. Sizer: We prefer to have the analyses offered in evidence and we prefer to have them proven in the usual way.

The Court: Well, if you object on that ground the objection is sustained. He may just state what the analysis was for.

Mr. Sizer: Yes, just state what analyses were made.

BY MR. MILLER:

Q. Just state what analyses were made from the report.

The Court: That is the same objection, the same ground of objection. He may state, state what he found as the result of his analyses.

BY MR. MILLER:

Q. State what you found as the result of your analyses aside from the cocaine, giving the percentages of each, refreshing your recollection from any data you have present.

The Court: Any data of his own, temporary data.
Mr. Miller: Yes.
The Witness: I reported on ——
Mr. Sizer: I object to what he reported on.
The Court: Yes, it is sustained.

BY MR. MILLER:

Q. Not what you reported but rather your recollection from it, what did you find?

A. I found the following figures from three different samples I examined at that time: Specific gravity — shall I give all of these?

Q. Yes.

A. The specific gravity 1.266. The three samples are in parallel columns all on the same line, it can all go on the same line here. The next sample, 1.271; the next, 1.271, identical with the other.

Q. I believe if you would give these to the stenographer, Doctor, just the contents of each of the three samples, without passing from one to the other, first give complete as to one sample, — that it would be more intelligible. I suggest you do that; take up the first sample again and give the specific gravity and so on, and then pass to the next.

A. The first sample was numbered Serial 4492.

Q. Well ——

A. Specific gravity 1.266.

Mr. Sizer: Before the witness proceeds with this analysis, I submit there must be some evidence offered to show that these were genuine samples of Coca-Cola and where he got the samples.

Mr. Miller: Now, if your Honor please, we will endeavor to do that and certainly more nearly than I think adverse counsel has done, as to the Coca-Cola drinkers. I objected to a great many of those questions that were asked and your Honor held that was ——

The Court: The Court remembers what it ruled. Let us get to this.

Mr. Miller: We will show these samples of Coca-Cola ——

Mr. Sizer (Interrupting): I would rather have him show it than to state what he is going to show.

The Court: Let the witness state before introducing the analyses where he got the samples.

Mr. Miller: All right, your Honor.

BY MR. MILLER:

Q. Doctor, just tell.

The Court: I mean, the samples that he analyzed.

The Witness: The first sample, which is Serial Number 4492, was obtained by me personally in Washington, D. C., from a druggist in that place who dealt in Coca-Cola syrup. The druggist's name was Z. D. Gilman; his place of business is 627 Pennsylvania avenue. The other two samples, numbered respectively 4516 and 4517, were received or sent to me by express by a deputy collector, Theodore Basch — a deputy collector in the office of the collector of Internal Revenue at Atlanta, Georgia.

Mr. Sizer: I want to object to any testimony about the samples sent to him by deputy collectors.

The Court: Do you propose to show by that deputy collector that he sent them?

Mr. Miller: I propose to show this by this witness that they came under seal from that deputy collector.

The Court: I am asking you, do you propose to introduce the deputy collector?

Mr. Miller: We expect to get Mr. Basch here. He is not here today, but we expect to get him here, and we desire at least to show by this witness that he received certain samples under seal from the collector.

The Court: You may show that, but I will admit it subject to the proof as to these two samples as to where Mr. Basch got it. If you do not connect it up I will exclude it. The first sample will be admitted and the evidence will be admitted as to that.

Mr. Miller: One authority I would like to submit to your Honor on the idea that we may not get that collector, although I think we can get him. The authority holds that there is a presumption that attaches to officials that they do their duty, and it is done correctly. Now, in addition to that, in admirality cases, the latitude is much broader than in any other kind of case, and matters of evidence are admitted inadmirality cases that would not be admitted in our State courts.

The Court: I should be glad to consider the authority.

Mr. Miller: I will pass it to adversary counsel and they can pass it to your Honor when they have examined it.

Mr. Sizer: We are not making that objection captiously but because I understand there is some variation in the analysis of these different samples, and if there is such variation, we want it shown that each of them was authentic and genuine.

The Court: I will admit it for the present on the statement of counsel that he would get the witness, and if he does not get the witness, I shall exclude it unless the authority submitted by Mr. Miller changes my mind.

Mr. Sizer: (After examining the authority.) I don't see anything in this authority that bears on that question at all.

Mr. Miller: It is the first section of the citation that I rely on.

Mr. Sizer: I don't see anything there that bears on it.

BY MR. MILLER:

Q. In that sample you yourself bought from this dealer give us as to that.

A. The sample was No. 4492 and was bought from a druggist. The figures obtained on the analysis were as follows:

Specific gravity, 1.2626.

Per cent of total solids, 51.25.

Per cent of ash, .06.

Per cent of sugar, .03, no — that is a mistake. Let me correct that.

Per cent of phosphoric acid, .03.

Sugar, 45.72.

Alcohol, by volume, .94.

Caffeine, 1.6.

Total acidity in $1\frac{N}{0}$ cc Na O C H8.

Per cent of tartaric acid calculated from acidity, .48.

Those are all the analytical figures from that sample.

Q. Lest we may not be able to get Mr. Basch, I am perfectly willing for counsel to see the report of the other sample, and if they agree, they may go in, in view of your Honor's ruling and can be accepted if we get Mr. Basch. I do not care to go into detail because there is a possibility that we cannot get him.

The Court: Benedict on Admirality, section 430, does undoubtedly show that Courts of Admirality, where justice requires it, takes notice of matters that would not be strictly admissible and are not strictly proven. They receive, for instance, the certificate of a notary, the certificate of a consulate, and so forth, but I think that should hardly be extended to matters of this sort at this stage of the trial, where if there was anything that made those different samples not correct, it might bring considerable injustice on the claimant, and therefore I would not admit it under this authority that you cite unless connected up, but I will admit it if counsel expect to reasonably connect it. I understand you are doing your best, but you don't know whether it can be connected.

Mr. Miller: I shall again say to adversary counsel that I am quite willing to pass those figures to them, and if they wish me to hold them until Mr. Basch comes and then treat

them as having been proven by this witness, I am willing to do so.

The Court: That is proper. The other two can be admitted with the understanding that the witness would testify that he used the same process on them.

The Court: Did you with reference to the others, use the same process?

The Witness: Yes, sir.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. You say that this sample that you have been testifying about — that you got it from a druggist in Washington?

A. No, sir.

Q. You didn't?

A. Yes, sir.

Q. You didn't see it taken from the original package?

A. Yes, sir; I think I did.

Q. What kind of a container was it?

A. I think it was a keg or barrel.

Q. What was the name of the druggist?

A. E. D. Gilman.

Q. Now, then, what test did you make or process did you follow to determine the quantity of caffeine?

A. I extracted with an appropriate solvent.

Q. With what did you extract it?

A. With an appropriate solvent.

Q. What was it?

A. I don't remember, but it was an appropriate solvent.

Q. Can you tell what was the appropriate solvent?

A. It was probably ether or ether chloroform or chloroform of alcohol, some of those solvents.

Q. Can't you tell whether it was ether, chloroform or alcohol?

A. No, sir; that was ten years ago.

Q. Would any difference in the result arise from the difference in the solvent?

A. No, sir; not necessarily ——

Q. It is your opinion ——

Mr. Miller: Let him answer.

Mr. Sizer: I didn't know he hadn't finished.

The Witness: I would like to say that in the process I used this solvent and extracted the syrup and evaporated the solvent and re-crystallized the caffeine and weighed the re-crystallized drug.

BY MR. SIZER:

Q. In your opinion, no difference in the result could be

attributed to the solvent you used?

A. No, sir; not in the purification of the product.

Q. Could there be any difference in the result due to the character of the solvent?

A. There would be different things extracted along with the caffeine.

Q. Would there be any difference in the amount of caffeine you isolated or determined due to the character of the solvent?

A. I think not.

Q. Are you sure of that?

A. Yes, sir.

Q. With different solvents, caffeine is soluble in different proportions of water, is it not?

A. Yes, sir.

Q. At a temperature of 25 degrees centigrade, what is the proportion of water that you used to dissolve caffeine in?

A. I cannot say.

Q. What would be the proportion of alcohol?

A. I cannot say.

Q. What would be the proportion of ether?

A. I could not give you those figures.

Q. You could not give any of those things?

A. No, sir.

Q. And if the quantities of the solvents you would use would differ in the different cases, would not that make a difference in the tests you would make?

A. No, sir; I think not. The tests aimed to extract all of the caffeine from the syrup and then purify that.

Q. Go on and state the balance of your process.

A. I am unable to state the details of the process at this time that I used then.

Q. Is that as far as you are able to go?

A. Yes, sir.

Q. That you simply treated it with an appropriate solvent?

A. Yes, sir.

Q. How do you know now that you got all the caffeine out of the syrup?

A. I presume I did because I used an appropriate solvent. At that time I made the tests to the best of my knowledge.

Q. You presume you got the caffeine because you presume you used an appropriate solvent?

A. There is no difficulty about dissolving caffeine.

Q. But you don't know what solvent you used.

A. I don't know what solvent I used.

Q. Therefore, you cannot say whether you got all the caffeine or not.

A. I am able to say I think I got all the caffeine.

Q. You think you got it all?

A. Yes, sir.

Q. As you dissolved it, what method did you use for isolating or separating the caffeine from the other ingredients?

A. Re-crystallized in order to purify it.

Q. Explain what you mean by re-crystallization—what was the process?

A. I do not remember the details of the process.

Q. You don't remember how you re-crystallized?

A. No, sir.

Q. What is the test you used to determine whether you had found caffeine or something else?

A. The identification of the substance presents no difficulty in its purified form.

Q. But I want to know what was the process by which you determined it?

A. Its solubility and the appearance of the crystals and the way it acted. There was no necessity of making any specific reaction test.

Q. Did you make any specific reaction test?

A. I don't remember.

Q. Then you just simply determined from the appearance of the crystals?

A. That was one way.

Q. Could you determine from the appearance of the crystals — could you tell the caffeine from theobromine?

A. Probably not from the crystals.

Q. Then you don't know whether what you got was caffeine at all?

A. I think it was.

Q. Do you know?

A. I presumed I had caffeine.

Q. But you don't know whether it was caffeine or theobromine?

A. I did at that time.

Q. How do you know if you simply looked at it?

A. I cannot tell how I knew then.

Q. You say the appearance would not indicate whether it was the one or the other?

A. I just say I got caffeine at that time, and determined it as such.

Q. But you say you did not apply any specific test?

A. I don't remember whether I did or not.

Q. So far as your recollection at present, the only test

you applied was to look at it and see the crystals?

A. I got it pure and weighed the resultant products.

Q. But still, so far as you remember, the tests you applied, namely the examination with the naked eye, would not determine whether what you had was caffeine or something else?

A. It was determined by the manner in which it acted and its solubility in water and all those things.

Q. What was its degree of solubility?

A. Very soluble.

Q. But how much.

A. I didn't test it.

Q. To what extent would caffeine and theobromine differ in solubility?

A. There is not much difference between caffeine and theobromine in their solubility.

Q. How do you know there was not some of the caffeine left in the syrup?

A. I aimed to make a thorough extraction.

Q. I know that, but what test did you use, how are you able to say whether you got all the caffeine?

A. I am not able to say that definitely, whether I did or did not get all of the caffeine out of the syrup. I can only say at that time I performed the tests to the best of my knowledge and the tests as made and reported, was the best I could do with it. I am not able to give the details of those tests at the present time.

Q. You reported tartaric acid calculated from the acidity. As a matter of fact, do you know whether there was any tartaric acid?

A. No, sir. That is a form of analysis in reporting those things.

Q. Then you don't know whether there was any tartaric acid in it or not?

A. No, sir.

Q. You don't undertake to say from your analysis that there was any?

A. No, sir.

Q. Did you use any animal charcoal in the purification of the caffeine?

A. I don't remember, but I don't think I did.

Q. Do you know what substance you did use in trying to purify it?

A. No.

Q. How did you get the phosphoric acid?

A. I presume that could be determined by weighing it with phospo-molybdate.

Q. I didn't ask you about any presumption, but are you

able to state how you determined the quantity of phosphoric acid in that syrup?

A. I don't remember how I determined it.

Q. Do you remember or can you state how you determined the quantity of cane sugar?

A. I presume ——

Q. (Interrupting.) No presumptions.

A. I am not able to say precisely how I determined it.

Q. By what process did you ascertain it ——

A. Presumably by trying ——

The Court: That is the very thing we don't want. Just state your recollection. We don't want any of your presumptions. If you have any recollection, say so, but don't give your presumption.

BY MR. SIZER:

Q. Then you are unable, in short, to state any of the details of the analysis and give us any information as to how you reached the results set down?

A. At the present time.

Q. You testified as a witness in the case of the Coca-Cola Company against Rucker, did you not?

A. Yes, sir.

Q. You stated in that testimony, did you not, that all three samples which you had analyzed were practically the same?

A. I don't remember now.

Q. Didn't you state this; and I read from the transcript of your testimony in that case and ask you whether or not it is correct ——

Mr. Miller: I object to offering any part of this transcript unless you offer it all.

Mr. Sizer: I am not offering the transcript of the testimony; I just want to read him and ask him ——

The Court: The exception is not well taken, but if the testimony is as you say, it does not contradict anything here. He has not stated here that they were not the same. However, on the theory that the other two might be introduced, it is probably competent to ask him the question, but first ask him if they were substantially the same. As I have said before, it often eliminates any reference to the record by asking the same question.

BY MR. SIZER:

Q. Is it or not true that the three samples you analyzed were substantially the same?

A. Yes, sir; I think there was a little difference in the weight of the sugar.

Q. About fifty per cent sugar in each sample?
A. Yes, sir.
Q. You found that the samples contained from .4 to .5 of one per cent. of acid ——
A. Yes, sir.
Q. —— phosphoric acid, and contains phosphate to a small extent?
A. Yes, sir.
Q. You did not undertake to say in your testimony in that case how you arrived at any of those results?
A. I was not asked.
Q. Then you didn't state?
A. No, sir.

REDIRECT EXAMINATION,
BY MR. MILLER:

Q. Was the test you applied at that time as to the samples substantially the same.
A. The methods of analyses were substantially the same.
Q. Were the tests you applied by testing also the same?
A. Yes, sir.
Q. State whether or not the tests you then applied were standard and recognized tests?
A. Yes, sir.
Mr. Sizer: I object to that. He says he don't know anything about what tests he applied.
The Court: I think it is proper where a witness does not recollect the details after a number of years, for him to state that he used the recognized test in use at that time. If he did, he can say so.
The Witness: Yes, sir.

RE-CROSS EXAMINATION,
BY MR. SIZER:

Q. How do you know they were?
A. I know I investigated the matter at the time and made the tests as laid down.
Q. Where did you investigate to find out what were the standard tests?
A. The literature.
Q. What literature?
A. That I had at hand.
Q. What was that?
A. It was the Dispensatory and the Pharmacopœia and works on organic chemistry and analytical chemistry.
Q. Do you mean to say those are standard of chemical analysis?

A. Yes.

Q. And those are the standards you followed in making this test?

A. Yes, sir.

Q. The standards laid down in the Dispensatory—

A. In the Dispensatory and the Pharmacopœia and works on organic chemistry.

Q. Do all of those authorities give the same test?

A. Yes, they give the same test; all the standard authorities give the same test.

Q. And the same methods of analysis are laid down in all of them?

A. That is too wide. I cannot say that they are standard as to all things. My methods were based upon the standard authorities that I had at hand at that time.

Q. Which ones?

A. I cannot remember which ones I used or consulted.

Q. It is a fact that the standard authorities differ?

A. They do not differ very widely. They differ as to the details, but they don't differ as to the standard methods of analysis.

Q. Can you tell which one of the authorities you followed at the time you made the analysis?

A. No, sir, I cannot.

Q. You don't know whether it was the Dispensatory or the Pharmacopœia or some other authority?

A. No, sir.

BY MR. MILLER:

Q. State whether you consulted various authorities before entering upon the tests and whether or not you were familiar with the standard tests at that time?

A. Yes, sir.

BY MR. SIZER:

Q. Which of them did you consult before entering upon the analysis?

A. I don't remember.

Q. Then how do you know you consulted any?

A. I know very well.

Q. How is that?

A. I know of my own knowledge I consulted authorities at the time of making the analyses.

Q. Do you remember that distinctly?

A. Yes, sir.

Q. Which ones?

A. I don't remember which ones; probably all I had at the time.

Q. You cannot remember whether you read the al-

manac or the dictionary or the Pharmacopœia or something else?

A. I cannot remember which particular one or how many authorities I had at the time and consulted in the transaction of this work that I did ten years ago.

Q. How is it that it impresses itself upon your mind that you consulted some authorities and you cannot tell what they were?

A. It is my custom, when I make investigations, to consult authorities.

Q. And so you testify because it was your customary habit?

A. I remember especially in this case that I consulted several authorities and made a more careful examination of the matter than I would in an ordinary routine analysis.

Q. How many authorities did you consult?

A. I presume all I had.

Q. I don't want your presumption, but your recollection. Have you any recollection as to how many authorities you consulted?

A. I have not.

Q. You don't know whether it was more than one?

A. I think it was more than one.

Q. Do you remember more than one?

A. Yes, sir.

Q. How many?

A. A dozen.

Q. And yet you cannot tell a single one?

A. Yes, the Pharmacopœia and the Dispensatory, Prescott's Method of Organic Analysis, Thorpe's Dictionary of Applied Chemistry, and all the works I had in the library at that time which contained any bearing on this investigation.

Q. You mean to say that you consulted all those books you had in the library in connection with this particular analysis?

A. I presume I did.

Q. I have told you several times that I don't want your presumption.

A. I am testifying to the best of my ability on the things.

The Court: Everything that the witness has said about what he presumes is excluded.

BY MR. SIZER:

Q. Do you undertake distinctly to say that you remember any particular authority that you consulted?

A. I think I can.

Q. Didn't you testify a while ago, and haven't you said several times, that you cannot recollect a single authority?

A. I have tried to testify that I examined the authorities I had at hand.

Q. Didn't you also say that you were unable to give us a single authority that you consulted about this matter?

A. I may have said so.

Q. Is not that true?

A. The truth is, I examined in this investigation the authorities I had at the time and which were at hand bearing upon the investigation.

Q. Now, you say the National Dispensatory was one of them?

A. Yes, sir.

Q. Is there anything in that about analytical or chemical work?

A. Yes, sir; a great deal.

Q. Will you please take that and point out the particular part you followed in making the analysis (handing the book in question to the witness).

A. I cannot do it.

Q. How could you do it then, then?

A. I cannot remember now what part of the book I consulted in that investigation.

Q. You cannot remember that you consulted any part?

A. Yes, sir.

Q. Look through there and tell us what there is in that book that in any way assisted you in the method of analysis that you followed.

Mr. Miller: Is that an edition that was in existence at that time?

Mr. Sizer: I don't know about that, but if it was not, he can say so.

A. Here is the article, page 344, on caffeine.

Q. Does it give you any analytical method for determining the quantity of caffeine in anything?

A. It gives the description of the preparation, which would be a method of determining it in some instances. It also gives the properties, and it gives the various constituents of caffeine, the melting point, the solubility, the volatility, and its reaction with various substances.

Q. Just read from that book what it says with respect to the analytical method to be followed in determining caffeine.

A. These are all analytical methods which can be used

in determining caffeine.

Q. You took that book and followed the analytical methods laid down there?

A. I didn't say so.

Q. Is there any analytical method laid down in that book?

A. These are all methods which can be used in the analysis detection and extraction of caffeine.

Q. Did you follow those methods?

A. I do not remember.

Q. What did you consult it for?

A. You ask me to point out in this book something that had to do with the determination of analysis of substances containing caffeine, and that is the article I show you.

Q. And that was the book you used in determining the analytical method—

A. I don't say so.

Q. Did you or not say so?

A. I did not. I don't know.

Q. Did you follow this?

A. I don't remember.

Q. If you didn't follow it, what was the purpose in referring to it?

A. If I referred to it, it was for the purpose of obtaining information on the subject.

Q. Now, what were the other books you consulted?

A. The Pharmacopœia, that is contained in the Dispensatory.

Q. What else?

A. Prescott's Organic Analysis.

Q. What else did you have?

A. Thorpe's Dictionary of Applied Chemistry. I had other works on organic chemistry.

Q. And which particular one of the books was it that you followed in determining the amount of caffeine?

A. I don't know. I have said that several times.

Q. What was the date on which you made that analysis?

A. The date is on the report.

Q. Didn't you say you made it in 1902?

A. I don't remember. The right date is on the report.

Q. Is it not a fact that you made the analysis in 1900?

A. I made the analysis prior to the date of that report. That was the ending of the analysis.

Q. This report was made on the second of April, 1901, was it not?

A. If that is the date, yes.

Q. And the analyses were made some time before that?

A. Yes, sir.

Q. Do you know how long before?

A. No, sir; but not long before.

Q. Is it not a fact that at the time of the passage of the Pure Food Law in 1906 there were no known methods of determining the compositions of soft drinks, syrups and soft drinks, with any degree of accuracy?

Mr. Miller: We object to that.

The Court: I overrule the objection.

The Witness: In my opinion, there were.

BY MR. SIZER:

Q. Did you hear the testimony of Doctor Fuller on behalf of the Government?

A. No, sir.

BY MR. MILLER:

Q. What was that previous question that you answered?

A. About whether there were methods of analysis of soft drinks prior to the passage of the Pure Food Law.

Q. Do you or not state that there were any specific methods outlined and published for that purpose?

A. As to the analysis of soft drinks prior to the passage of the Pure Food Law, I think there were.

Q. Can you recall some of those?

A. The authorities all gave methods for the analysis and determination of organic substances in any drink.

Q. That is literature of the kind you refer to, the Dispensatory and the other books you have referred to?

A. The chemical literature containing methods of determining the organic substances in any mixture.

Q. Was there or not any standard publication or method at that time with respect to the determination of the chemical analysis of soft drinks as distinguished from others?

A. I don't know of any such publications as that.

BY MR. SIZER:

Q. As a matter of fact, there was not at the time of the passage of this Pure Food Law any method published of determining with accuracy the constituents of these soft drinks?

A. I do not know of any methods being published under that title, methods of analysis of soft drinks.

Q. There have been methods published since the passage of the Pure Food Law?

A. I do not know of any of that particular substance.

(Witness excused.)

W. B. REEVES,

the next witness called in rebuttal on behalf of the United States, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,

BY MR. MILLER:

Q. Where do you live?

A. Atlanta.

Q. State what relation you sustain to the Coca-Cola Company in the year 1901 and in the year 1902.

A. In 1901 I traveled for them just during the summer. In 1902 I started out to travel for them in March, and about May 1st I was taken from the road and sent to their New York office.

Q. What was your connection with them in 1900?

A. I was traveling for them six months in the summertime.

Q. State during that period, 1901, 1902 and 1900, from what branch, if any, of the Coca-Cola Company, Washington, D. C., was supplied with Coca-Cola syrup.

A. I could not state positively, but my general understanding was that it came from the Philadelphia branch, everything in that territory.

Mr. Sizer: I object to a mere understanding of the witness.

The Court: The objection is sustained.

BY MR. MILLER:

Q. What reason have you for making that statement?

Mr. Sizer: The statement being excluded, I object to him stating why he makes it.

The Court: I sustain the objection.

BY MR. MILLER:

Q. What information have you on that subject?

Mr. Sizer: I object to that for the same reason.

The Court: I sustain that objection.

BY MR. MILLER:

Q. What do you know as respects that matter?

A. I do not know anything, because I was not at the origin of shipments when they started out.

Q. Were you in the City of Philadelphia and at the branch office of the Coca-Cola Company at any time?

A. I suppose I spent three days there in my life altogether.

Q. When were those days spent there?

A. I could not state positively. I have stopped off at

Philadelphia on my way to New York, in 1902, probably the first of May.

Q. State whether or not you went to the office of the Coca-Cola Company, or the manufacturing place of the Coca-Cola Company, in Philadelphia.

A. I did. I went into the office, but not into the factory department.

Q. Now, when you went to New York, what was your connection there?

A. Manager of the New York branch.

Q. And as such, what were your duties?

A. My duties were to manage the salesmen and run the office in a general way, and solicit some business myself.

Q. What territory was supplied with Coca-Cola from your branch of the New York office?

A. Why, with me a very few shipments out of New York City—it was built there for the purpose of supplying the New York trade only.

Q. Well, state from where Merchandise No. 5 was procured at the time for New York and other branches.

A. New York had an office at that time and did not manufacture at that time.

Q. Where did you get your Coca-Cola syrup from?

A. From the Philadelphia factory.

Q. From the Philadelphia factory?

A. Yes, sir.

Q. Where was Merchandise No. 5 obtained from that was used at the Philadelphia factory?

A. I could not state positively. I understand—

Mr. Sizer: Don't state that.

BY MR. MILLER:

Q. I will get you to state whether or not you had any conversation with Mr. Asa G. Candler, president, on that subject.

Mr. Sizer: We object to that.

The Court: The objection is sustained.

BY MR. MILLER:

Q. If the formula for making Coca-Cola syrup was changed about 1904 or at any other date, tell what you know in respect to that.

A. We did not commence manufacturing at that date; did not have anything to do with it at that time in 1904.

Q. Well, what did you know as to a change in the nature of Merchandise No. 5 at that time, if anything, in the manufacture of Merchandise No. 5, if anything, at that

time?

A. If I—I do not know positively as to where it was manufactured, whether there was any change in location of manufactory.

Q. Do you know whether there was any change in the location of the manufactory?

A. I could only state from what I understand—I could not state positively.

Q. How long were you with The Coca-Cola Company in Atlanta, Georgia?

A. I was not with them there at all, only as to start there. My trip lasted—as long as I was with the company I was over there at the beginning and end of my trip, which lasted about six months.

Q. At the time you were in Atlanta was there any portion of the syrup manufactured in Atlanta?

A. At the time I was at Atlanta?

Q. Yes.

A. I have seen syrup manufactured there or I have seen them simply put sugar into the tank and I was not particularly interested in what they used at that time, so did not investigate.

Q. If after you went to New York there was any change—I mean, any change in place where this Merchandise No. 5 was manufactured, tell what you know about that.

A. Well, I would have to state from a general understanding; I could not make a positive statement.

Q. You do not know who manufactured No. 5?

A. Let me see—I knew that Doctor Schaefer manufactured it—I don't know the exact date when he commenced manufacturing it.

Q. How came you to know Doctor Schaefer manufactured it?

A. Why, I suppose I heard from the heads of the company, heard them state it from time to time.

Q. Did you or not go or meet with Doctor Schaefer, attend meetings when Doctor Schaefer was present?

A. I have attended several meetings — not attended them, but I have been with Mr. Asa G. Candler at several meetings at the R. & H. M. Chemical Company office every time he came to New York—every time he came to New York he usually took me along with him, but I did not hear what was said at these meetings.

Q. And what do you mean by the R. & H. Chemical Company.

A. That is the selling agent.

Q. Well, what do you mean by "R. & H."? What do

they stand for?

A. For the Roessler & Hasslacher Chemical Company.

Q. When was the first time that the president of the company, Mr. Asa G. Candler, came to New York for the purpose of conferring with Doctor Schaefer, as far as you knew?

A. Why, Mr. Candler usually came to New York about twice a year, and he always had a meeting with Doctor Schaefer, I think, while he was there.

Q. When did you go to New York, did you say?

A. 1902.

Q. How long after you went there until Mr. Candler came?

A. I think Mr. Candler was there in three months after I went there. I don't think he called on Doctor Schaefer that time. If he did, I was not with him.

Q. When was the first time he called on— First, I will ask you, would you usually go around in New York with Mr. Candler when he came there?

A. Yes, sir; usually. One or two calls he left me in the office, but I usually went with him on these visits.

Q. When was the first occasion when he went to see Doctor Schaefer?

A. I could not tell approximately the date.

Q. I am talking about the first time.

A. I could not positively answer. It did not concern me very much and it is hard for me to remember back that far. Like calling on the different banks there, I could not state anything positively about it.

Q. Well, I understood you to state he didn't go the first time.

A. I stated I didn't think he did. Mr. Candler was probably away from me two or three hours, or probably two or three days; I could not tell what he did, but I didn't go with him on the first trip.

Q. Now, while you were traveling out of Atlanta as salesman for the Coca-Cola Company and before you went to New York, what territory did you travel in?

A. I started from Atlanta, Ga., and went out as far as Seattle and returned.

Q. Did you go to Washington?

A. Washington, D. C.?

Q. Yes.

A. No; they covered the work at Washington, D. C., from New York.

Q. Was that territory at Washington covered by salesmen from Atlanta?

A. At that time I could not state positively, but I

think probably Washington City was worked twice a year. The business at that time was undeveloped there.

Q. And by "worked" you mean salesmen were sent there to solicit orders?

A. Sent there probably twice a year. I am stating that from what I know from similar territory, how it was worked.

Q. Well, when salesmen solicited orders, what followed when the orders were taken, the shipments of Coca-Cola syrup would be sent forward in ordinary course?

A. The ordinary course of the salesman was to get the orders and send them to the Atlanta office to be O. K.'d, and then after that the Atlanta office sent the shipment slips to the different branches to be filled.

Q. That is, to the different branches of the Coca-Cola Company throughout the United States?

A. Yes, sir.

Q. Now, what number of offices did the company have at that time?

A. Let me see—they had Los Angeles, Dallas, Texas, Chicago, Philadelphia and Atlanta. They possibly had an office in New York at that time and an office in Pittsburgh.

Mr. Miller: You may cross-examine.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. Mr. Reeves, do you drink Coca-Cola?

A. Yes, sir.

Q. How long have you drunk it, Mr. Reeves?

A. I think my first glass must have been about—let me see, I drank a little bit as far back as twenty years ago.

Q. And what is your age now?

A. Thirty-six.

Q. How much do you drink per day?

A. Now?

Q. Yes.

A. About a glass a day; sometimes I will go for two or three weeks without drinking any.

Q. Did you drink it in larger quantities at any time?

A. When I was in the New York office I drank on an average of from five to seven glasses per day.

Q. Did it ever produce—or, what effect did it produce on you?

A. I could not state that it has ever produced any effect on me—any bad effect.

Q. Are you in good health?

A. Yes. I am in better health than I have been in

some time, at the present time.

Q. Did the use of Coca-Cola ever tend to create a habit or craving with you?

A. Well, I have always contended that it did not, and I went for seven months—let me see about that; I went from September, 1901, until about March, 1902, without drinking any as an experiment, and I did not have a craving for it and I did not see any change at that time—I think I went back to drinking it then.

Q. You say that you drink about one glass a day?

A. I will average about that a day. I should say that some weeks I will go without drinking any; whenever I feel like it I will go and take a glass.

(Witness excused.)

Mr. Miller: It is now practically 12 o'clock. We did not know exactly that the claimant would close in the case at this time. I think time would be saved very materially if your Honor would permit an adjournment until Monday morning.

The Court: How many more witnesses will you have?

Mr. Miller: We will expect to call Mr. Basch, if we can get him. We might have three or four witnesses—I might be able to examine one right now if your Honor will give me a minute for conference.

The Court: We will take a recess for five minutes.

(A recess was then taken for five minutes, after which the Court met pursuant to recess, and the following evidence was taken.)

Mr. Miller: We will call R. K. Smith.

R. K. SMITH,

a witness called in rebuttal by the Government, of lawful age, duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. MILLER:

Q. Talk out loud, Bob.

A. Yes; all right.

Q. How old are you?

A. Twenty-two.

Q. Where do you live—in Chattanooga?

A. Yes.

Q. What has been your experience at soda fountains? Where have you served at fountains — have you served fountain drinks here in Chattanooga where Coca-Cola was dispensed?

A. Yes, sir.

Q. How long have you been in that business?

A. Yes, I have.

Q. How long have you been in that business, and at what places?

A. I have been in it going on about six or seven years?

Q. Well, what places have you worked?

A. I worked at the Live and Let Live place, the Palace and for Brock.

Q. Did you or not engage in business a while for yourself?

A. Yes.

Q. Where?

A. At the Temple Court Building.

Q. I will get you to state the result of your observation and experience as to the consumption of Coca-Cola by children.

Mr. Sizer: I object to that. He is going back into a matter in chief. They examined Doctor Kebler and several other witnesses on that.

Mr. Miller: I submit, if your Honor please, we were met with the proposition—I first started in to do that and your Honor said that we might take it for granted without proof—and when I went to examine Doctor McQuillan then counsel sought to show certain things that it is unnecessary to sum up—I propose to meet that, without stating what I propose to show by this witness—I propose to meet just what they brought out in their testimony. We should not have gone into that question at all except in rebuttal of testimony.

Mr. Sizer: I will say that we would not have gone into that matter at all except in rebuttal of the testimony of Doctor Kebler and perhaps one or two or three witnesses to the effect that children were in the habit of going to fountains. If counsel is willing to eliminate all of that from the testimony with respect to the habit of children drinking Coca-Cola, we are willing to have the same course with reference to our testimony.

Mr. Miller: Our inquiry is as to the public health. There is no limitation put on it. It was a part of our case in chief what its effect is on the nervous person and children. There we stopped. That is the effect we have shown on them. I undertook to show by way of rebuttal —if that is not a rejoinder of issue I don't know what is— I undertake to show by rebuttal that children do take it.

Mr. Sizer: They started out that the caffeine used in Coca-Cola was a poisonous and deleterious ingredient. In order to do that they asserted the proposition that children were in the habit of visiting soda fountains and getting Coca-Cola and that it is more injurious to children

than to grown people, and they introduced Doctor Kebler —your Honor will remember specifically that he testified about standing around at soda fountains and watching children drink, and the Rev. Dr. Stewart to the same point.

The Court: I think the only point that gives me doubt was Mr. Miller's statement that I had limited the matter in chief. My recollection is I did not limit them in chief and I only limited the proof to proving whether it was indiscriminately sold. I never limited the proof in chief as to the extent of children drinking it, or I have no recollection of it. They offered to prove in chief by two or three witnesses—I can't remember their names—that whoever wanted to, drank it. I do remember that they did prove in chief that children drank it by the Rev. Dr. Stewart and Dr. Kebler.

Mr. Sizer: And then a man who sold it at Bridgeport, Ala., said that the boys drank it.

The Court: Yes, that was distinctly matter in chief, and the claimant brought on witnesses to contradict that, but that was their defense and their right, and I think this is matter in chief.

Mr. Miller: If your Honor takes that view—

The Court: I did not intend to limit you on that point of whether children drank it or not. I limited you on another point, showing that it was indiscriminately drunk, that children could get it. But I allowed you to go into the fact as to whether children drank it, and if I am wrong I will allow you to go into it.

Mr. Sizer: There was no such limitation as Mr. Miller insists on.

The Court: I do not recall it, but counsel can look it up. I do remember limiting you to the fact it was sold indiscriminately. That was proven two or three times and not disputed.

Mr. Sizer: No, we did not dispute that.

Mr. Miller: I submit the fact that it would be sold indiscriminately; that means that it was sold to children.

The Court: Well, as to whether they wanted to buy the Coca-Cola at soda fountains, that they could buy it, there is no evidence that soda fountains refused to sell it to children, and there is no dispute on that. There is a dispute as to the question of fact whether children availed themselves of that privilege, and that you went into yourself and they denied it.

Mr. Miller: I understood it was brought out by their cross-examination. I understood that we were restricted in that respect.

The Court: I think that I admitted all the testimony

of your witnesses as to the extent to which children actually drank it.

Mr. Miller: I did not think your Honor did—I thought your Honor eliminated that.

The Court: I understand Rev. Dr. Stewart testified directly to that.

Mr. Miller: As to the general consumption all over the United States only.

The Court: You proved it that he saw it sold at nine or ten o'clock at night—that children went into—

Mr. Miller: I think instead of "children" he said "young people."

Mr. Sizer: Well, he declined to state children; Mr. Miller tried to get him to say children did.

Mr. Miller: Well, with that understanding, your Honor, we may recall the witness on Monday if we find that your Honor did limit us on that.

The Court: Yes.

Mr. Miller: If we find that we are in error as to that, we would like to file a brief on the legal proposition as well. I will give adversary counsel a part of it.

The Court: On what legal proposition?

Mr. Miller: That it is not proof in chief at all.

The Court: I don't care for it.

Mr. Miller: I should say we are not prepared to go further with the examination until Monday morning and I think we can conclude Monday unless the cross-examinations are very lengthy.

The Court: You have about two witnesses more?

Mr. Miller: I think we will not have in excess of four, and perhaps, unless your Honor rules this testimony out that we have just offered, we will have three or four dispensers from Chattanooga. Barring that, we will only have three or four witnesses to recall.

The Court: Well, I think it is proper to take an adjournment now, with the understanding that by the reading of the depositions,—I mean, treating them as in, we have saved time,—I have no doubt about that, and if we can shorten it by an adjournment, on the request of counsel, we will adjourn now until Monday morning at nine o'clock.

(Thereupon the Court, at 12:15 o'clock P. M., adjourned until Monday morning, April 3, 1911, at 9 o'clock A. M.)

CHATTANOOGA, TENNESSEE,

MONDAY MORNING, APRIL 3, 1911, NINE O'CLOCK A. M.

Court met pursuant to adjournment.

Appearances: The same as on Saturday.

GOVERNMENT'S EVIDENCE IN REBUTTAL CONTINUED.

The Court: We will proceed with the case on trial.

Mr. Sizer: Since the adjournment on last Saturday we have received the deposition of Doctor Schmiedeberg, to which we referred at the time our testimony was closed, and we ask leave now to offer that deposition.

The Court: You may do so.

Mr. Miller: If your Honor please, we make no question as to the time within which that deposition arrived, that is entirely out of the way, and as I understand in the first place is eliminated, any disputed matters of that kind, but in the next place we say that we do not offer in general any objection on that point, but we do offer certain objections to the reading of that deposition.

The Court: Well, state them.

Mr. Miller: In the first place, the deposition contains the German text and also what purports to be the English translation. We say that translation is not correct. That is the first objection, because we cannot understand German and the jury cannot understand, and we object to that.

In the next place, certain instances I have pointed out and I have given a copy to adverse counsel, we say that the answers to the questions on cross-examination were not responsive in the slightest. This deposition was taken on interrogatories and we could not face the witness face to face, and inasmuch as the answers on direct examination are responsive, we do not think that they should be permitted to read the deposition in chief where the answers are responsive to the questions and when ours on cross-examination are not responsive, that it would be unjust and unfair to us, and we will pass a copy of our objections to the deposition of Doctor Schmeideberg to adverse counsel.

(The objections are as follows:)

April 2, 1911.

CROSS-INTERROGATORIES ON DEPOSITION OF DR. OSWALD SCHMIEDERBERG.

No. 1. Page 15, Question 3. State whether or not it (caffeine) is a food in any sense; if so, what. Answer js not responsive.

No. 2. Page 16, in answer to Question 5, the word "foods" is used as a translation of "genussmittel."

No. 3. Page 16, Question 6. What are the most prominent effects of caffeine on the human system? Answer is restricted to "quantities under consideration."

No. 4. Page 16, answer to Question 6 is incorrectly translated.

No. 5. Question 7, "Does it (caffeine) tend to produce sleeplessness and wakefulness, sometimes called insomnia?" Answer is again restricted to "quantities under consideration."

No. 6. Page 16, Question 8. "Suppose a nervous individual, or growing child, during the period of adolescence, or high school pupils doing hard work, should repeatedly take doses of caffeine in the form of a soft drink, containing, say 1.20 grains of caffeine, what would be the result?" Answer not responsive.

No. 7. Page 17, Question No. 9. "Is it not well recognized that children should refrain from taking stimulants like caffeine?" Answer is not responsive.

No. 8. Page 17, answer to Question 9 is not correctly translated.

No. 9. Page 17, Question 10. "If caffeine produces sleeplessness, or wakefulness, and a child or nervous individual takes doses as above from day to day, what might be the tendency, and what the effect, of such a course on the nervous system?" Answer not responsive.

No. 10. Page 17, Question No. 10. Answer incorrectly translated.

No. 11. Page 18, Question 11. "If this stimulation is continued from day to day, would it not have a tendency to lower the vitality of the individual? If not, would it increase the vitality, and if so, why and how?" Answer not responsive.

No. 12. Page 18, Question No. 12. "Suppose an individual afflicted with tuberculosis should consume a soft drink containing 1.21 grains of caffeine from day to day, would the influence of such a beverage be beneficial or otherwise? If you answer in the affirmative, give reason why, and if the negative, state the reasons." Answer incorrectly translated.

No. 13. Pages 18 and 19, Question 13. "Is or is not the condition frequently known as nervousness the forerunner of many diseases?" Answer not responsive.

No. 14. Page 19. Question, "Does caffeine in any way influence the important constituents eliminated in the urine, and if so, why, and what is the significance of it?" Answer incorrectly translated.

No. 15. Page 20, Question 19. "Would one or more glasses of a beverage of the above character be favorable or otherwise to metabolism?" Answer is not responsive.

No. 16. Page 27, Question 38. "If fatigue is due to the conditions you have described, is it or is it not true

that a stimulation of the nervous and muscular system will increase the agents which cause fatigue and proportionately lower the reserve forces of the individual?" Answer is not responsive.

No. 17. Page 27, Question 39. "Will or will not the repeated stimulation with the results set forth above be more or less of a drain on the physiological reserve of the individual?" Answer is not responsive.

No. 18. Page 27, Question 40. "Is it or is it not a fact that the lowering of the physiological reserve of the individual renders him more liable to disease and less able to do efficient work?" Answer is not responsive.

No. 19. Page 28, Question 42. "If you answer in chief that you have had occasion to write any article or treatise dealing with caffeine as contained in Coca-Cola syrup, please file a copy of such article or treatise and state occasion for your writing or publishing the same." Answer incorrectly translated. As given in translation, answer is as follows: "I have not written any article or treatise on Coca-Cola except this deposition." The proper translation is: "Outside of this opinion I have written nothing on Coca-Cola."

No. 20. Throughout the interrogatories the translation is faulty. For example, the word "genussmittel" is constantly translated as "food materials."

The Court: As far as the question of translation is concerned, we have a couple of German scholars—

Mr. Miller: Yes—

The Court: When was this deposition taken?

Mr. Sizer: I do not remember exactly. We prepared our interrogatories for this witness some two months ago and sent them to Max Adler at Strassberg, Germany, when they were agreed on, and after the interrogatories were mailed something like a month we received from the Dead Letter Office a notice that Max Adler was no longer in Strassberg, and had removed to Los Angeles, California, and we had to send another copy of the interrogatories to the Vice-Consul at Kiel, Germany, and the deposition was taken by the Vice-Consul at Kiel on the same interrogatories, and that is the reason it took the deposition so long and that it was so much delayed.

Mr. Miller: We agree to that and counsel will bear me out when I say that everything was waived, everything else, and we agreed with the defense that that might be done. We do not object to the deposition because of time. That does not rise in this case.

The Court: This German word is translated "coffein" all the time and I suppose it means "caffeine."

Mr. Sizer: The German word is "coffein." I understand the only difference between the German word and the English word is that the Germans spell it "c-o-f" instead of "c-a-f."

Mr. Miller: We do not make any objection about that.

The Court: Very well.

Mr. Miller: We will pass, or have passed counsel a copy of the objections, and we pass one to your Honor.

The Court: Yes.

Mr. Miller: In that portion of the translation we might refer to one particular word of the translation, the word is used as a food—

The Court: Is that the word "genussmittel"?

Mr. Miller: Yes, that is objectionable.

Mr. Sizer: I think we can probably settle all this question about the correct translation by selecting Dr. Boos on one side and Dr. Wesener or Dr. Mallet, some of our experts, and let them get together and go over this.

The Court: I have read the objection to the deposition in so far as it relates to the incorrect translation. I think that the matter can be taken by a German scholar on each side, that they can take the deposition and see if they can agree, and if they cannot, they can appeal to the Court, and I think with a German dictionary the Court may be able to refresh its recollection sufficiently to decide the matter.

So far as the objection that the answers are not responsive is concerned, it is true that some of the answers are not responsive. For example, the answer to Question No. 12, on page 18, where the question calls for the reasons to be given for the answer, the reasons are omitted. In one or two, or some of the other answers, they are not answered as fully as they might be, but they relate to perfectly obvious matters and not the general knowledge or matters otherwise than have been fully proven in this record, and that is immaterial. And I shall in so far as I find that the witness does not give his reasonings, instruct the jury, as I have done, that in considering the opinion of experts they are to weigh the testimony largely in accordance with the reasons for the opinion, and where the witness does not give the reasons it would go to the weight of the testimony in the mind of the jury, or it should do so. On the whole, I think these answers on account of not being responsive go to the weight and are proper matters to argue to the jury as to the effect of the weight of the opinion. I therefore overrule the objection and suggest that the two German scholars get together and go over the deposition.

Mr. Sizer: I suggest that they let one of their German scholars—Dr. Boos—

Mr. Miller: Doctor Boos will do so when he is at leisure. We need him here just now.

The Court: There are only three or four sentences objected to and I can take a recess of ten minutes if you want me to.

Mr. Miller: Well, I have no objection, and in order to save time I will say I have prepared what we feel to be proper issues, as suggested at a former day of the term, and I would be glad to file one or pass one to the Court, and another one to adversary counsel.

The Court: Just let the record show that those were presented.

(The proposed issues are as follows):

PROPOSED ISSUES OF LIBELLANT.

"DISTRICT COURT OF THE UNITED STATES,
SOUTHERN DIVISION,
EASTERN DISTRICT OF TENNESSEE.

UNITED STATES
vs.
FORTY BARRELS AND TWENTY KEGS OF COCA COLA.

The Libellant, in lieu of the issues of fact tendered by Claimant (and reserving exceptions heretofore taken) hereby presents the following as proper issues to be submitted to the jury:

1. Was the caffeine contained in the product seized a poisonous ingredient?

2. Was the caffeine contained in said product a deleterious ingredient which may render or might have rendered said product injurious to health?

3. Had the product seized herein been mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority thereof was concealed?

4. Were there such substances as "coca" and "cola" known under their distinctive names at the time this proceeding was begun?

5. Was the name "Coca-Cola" as used on the labels on the packages containing the product seized taken in connection with the pictorial design on said packages a representation of the presence in said product of any substances known as "coca" and "cola"?

6. Did said product contain any ingredient or substance of appreciable quantity and desirable quality derived from the coca leaves and the cola nuts?

7. Was said product an imitation of any other article or articles?

8. Was said product offered for sale under the distinctive name of any other article or articles?

9. Is "Coca-Cola" the distinctive name of the product in controversy in this case under which said product without any substantial change of formula has been known and sold for twenty years?

J. B. COX,
U. S. District Attorney.

W. B. MILLER,
Special Counsel.

Mr. Miller: Now, if your Honor please, there is one other point before the recess. I have no doubt that distinguished counsel are more familiar with reference to the debate as to the words "added" and "which may render" as they were construed when these laws were under consideration, and I have no doubt they have copies, but I have had, at the expense of some labor and time, prepared excerpts or rather a sort of synopsis from the entire Congressional matter as far as they pertain to the consideration of this bill and especially these particular words of the bill which I think it would be well for your Honor to have, and I will be glad to pass one to adversary counsel and one to your Honor. I understand it to be entirely proper that the interrogation of the chairman of the committee and his fellow members are always proper matters for consideration, and the Court will consider such interrogations and responses as it sees fit in giving them the proper significance.

Mr. Sizer: I understand that your Honor takes judicial notice of all proceedings in committees and the House of Congress in respect to the passage of the bill. We have a publication from the Government Printing Office of a hearing in the committees and in Congress which we will submit to your Honor and refer to in argument.

Mr. Miller: I have these excerpts which pertain to everything and will bring the Court's attention to what was said there and done as regards these words.

The Court: These excerpts will be very helpful. This will be a very material question in the lawsuit. It is my impression, not a conviction at all, an impression from former reading, that the reports of Committees are proper to be considered in determining the construction of

statements made by the Chairman of the Committee in reporting the bill. To what extent you may go further to the statements that were made, I am uncertain. I would be glad to have authorities on that point. It seems proper that we should look at the statements of individual members, but not those of members who were not on the Committee, and those will not be looked at.

Mr. Sizer: I do not think that limitation would be of any great importance in this case because most of the important statements were made by some members of the Committee.

The Court: Do you agree the Court may properly look at the statements made by any members of the Committee?

Mr. Miller: We will not have any controversy about that. I have included them all there, but I believe it is only the report of the Chairman and, second, the answers to the interrogatories that are put to him by his fellow-members — I believe that is the limitation the majority of courts put on this question. But I want to say that I have included — that is, I have endeavored to include — I don't say that is correct, but I have endeavored to include everything so your Honor may take it. Your Honor may have a different view of it.

Mr. Sizer: I will say that we have no objection to your Honor taking all of it. I am willing to say now so far as our side is concerned your Honor can look through the entire proceedings in the Committees and Houses of Congress and anything else your Honor deems material that your Honor may think might shed light on a question.

The Court: I do not like to look further than the Appellate Court would look in reviewing my action.

Mr. Miller: This Court should only look so far as it thinks it ought to look.

The Court: I do not want to look any further.

Mr. Sizer: The Court may look at anything of that kind in arriving at a construction — the Court will take advantage of any source of knowledge — your Honor may go over and look through the different lines of examination of witnesses, how a particular word, if submitted, was discussed, what limitation was suggested, and in that way anything that would shed light on the question ——

The Court: I do not understand it as fully as that — it may not be material ——

Mr. Miller: I think distinguished counsel has had a change of heart since Doctor Vaughan was on the witness stand. We tried to inquire into that very thing, as to what he said before one of these committees.

Mr. Sizer: That is a matter of evidence that you could

not go into — but your Honor will take judicial notice of any questions that were asked there, but you cannot bring a man on the witness stand and examine him here about that — at least, they could not cross-examine him as to what he said on the hearing.

The Court: We will now take a recess for ten minutes.

(Whereupon a recess was taken for ten minutes.)

AFTER RECESS:

The Court: We cannot wait any longer for the translation. I had no idea it would take so long. We will proceed with the rest of the case.

Mr. Miller: We want to recall Howard Candler for a moment.

C. HOWARD CANDLER,

recalled to the stand for further examination, testified as follows:

RECROSS-EXAMINATION,
BY MR. MILLER:

Q. Did your white and colored help use the same toilet room in 1909?

A. No, sir.

Q. You had two separate ones?

A. Yes, sir.

Mr. Miller: That is all I care to ask.

(Witness excused.)

JOHN S. CANDLER,

recalled for further examination, testified as follows:

RECROSS EXAMINATION,
BY MR. MILLER:

Q. By way of refreshing your recollection as to what these analysts of the Coca-Cola Company testified to in 1902, April or May, in the case of the Coca-Cola Company vs. Rucker, I will ask you to refer to page 59 of the transcript I hand you, and state if you can recall from that whether the analyst stated that he found one-four-hundredths of one per cent cocaine content, or whether he found one-four-hundredths of a grain per ounce of the mixture.

A. (Reading.) "I found it was so very slight that it was very difficult to get a purified article of cocaine out of the quantity I had, so I got pure cocaine and got one four-hundredth of a grain. It would take one four hundred glasses to get the usual dose."

Q. I didn't ask you to read that.

A. That was the whole of the answer, and I did not care to read one part of the answer.

Q. I asked you for your recollection based on that as to whether or not that witness, the analyst for the Coca-Cola Company, stated that he found one four-hundredths of a grain of cocaine per ounce in Coca-Cola syrup.

A. I have no recollection other than is there.

Q. Having read that, is it not your recollection now that in your presence and in the presence of the directors and President of the Coca-Cola Company that witness made in substance this statement, namely that he found one four-hundredths of a grain of cocaine per ounce of Coca-Cola syrup?

A. I have no recollection as to who was present, and I have no recollection about what he said except as this refreshes me. I remember the one four-hundredths, as I said the other day, but I do not remember whether he said one four-hundredths of a grain, or one four-hundredths of one per cent. I do not now recollect it.

Q. Having refreshed your recollection, what is your recollection?

A. None except what I get from this book.

Q. Have you any recollection, as refreshed from that book, as to what he said?

A. No, sir. I take it that this is correct, though. I just simply do not recall what he said.

Q. Now, I will ask you if it is not true that as the result of that litigation and that analysis, the Coca-Cola Company made a contract whereby the manufacture of Merchandise No. 5 was given to Doctor Schaefer exclusively, and that one of the conditions of the contract was that cocaine was not to appear in the mixture?

A. My recollection of that is this, that no director, the President or anyone else of the Coca-Cola Company at the time of that trial, had any idea that there was a trace of cocaine in No. 5. When the two chemists in question testified that this immaterial quantity was there, then every member of the Board of Directors of the Coca-Cola Company wanted it out, and it was their purpose in having No. 5 made by the Maywood, New Jersey Chemical Company to get someone who could make it better than we could make it, and if there was a trace as we made it, we wanted it out. So far as the written agreement with Doctor Schaefer is concerned, it does not contain a word that he must get it out.

Q. I think you have argued whereas I asked you a simple question, and that is if it was not one of the purposes

of the Coca-Cola Company, in making the contract with Doctor Schaefer, to transfer the manufacture of Merchandise No. 5 so that cocaine would not appear in the mixture known as Coca-Cola syrup?

A. Our purpose was to get the best flavoring that we could get from the coca and cola by the best method, by the latest process, and in getting it, we of course, did not want any cocaine to be in it, and under his process, he said it would not be.

Mr. Miller: I submit to your Honor as to whether we have had a response to my question.

The Court: I don't think it is responsive. Read the question to the witness, Mr. Stenographer.

By the way, I have a telegram here for Mr. Simmons of the jury. It is sent to me — to him, in care of me.

Mr. Miller: I would like to state publicly to Mr. Simmons, when I get his attention, I would like to state publicly that I had a letter from the Manager of the company with which he is connected, asking me to use my influence to get him excused to attend the County Court at Benton. Of course, it is impossible.

The Court: It is certainly to excuse any juror at this stage of the case.

Mr. Miller: Of course I knew that, but I preferred to make the statement publicly.

(The question last put to the witness was read to him.)

The Witness: It was the purpose of the Coca-Cola Company not to have even a trace of cocaine in it and for that one reason, among others, Doctor Schaefer was employed to make Merchandise No. 5.

Mr. Miller: Now, I move to exclude the two previous answers because not responsive to my question.

The Court: The motion is sustained.

Mr. Miller: That is all we care to ask Judge Candler.

(Witness excused.)

Mr. Miller: Now, referring to pages 2300 and 2323 and 2324, my understanding of the ruling of your Honor was that testimony as to cocoa and chocolate has not been admitted and is excluded under your Honor's ruling.

The Court: You are correct, that is the ruling.

Mr. Hirsch: We now have the deposition translated, and we will proceed to read it.

The Court: The questions are numbered in the deposition, are they?

Mr. Sizer: Yes.

Mr. Miller: The deposition was taken subject to exceptions for incompetency and irrelevancy, your Honor. May

we submit a brief as to such portions as we consider incompetent, or does your Honor prefer to rule on our objections now?

The Court: Well, as you see fit. You may make your objections as the deposition is read.

Mr. Sizer: Then Mr. Candler will read the deposition.

The Court: Please read the number of the question each time so that counsel may note the exception to the question and the stenographer may get it.

Mr. Candler: All right.

(Thereupon Mr. Candler read the deposition of Doctor Oswald Schmeideberg as follows):

(Deposition of Doctor Oswald Schmeideberg, offered at this time by consent on behalf of the claimant and intervenor.)

"Depositions of Dr. Oswald Schmiedeberg, a material witness on behalf of the defendant and claimant in the above case, taken on the twentieth day of March, 1911, at Kehl, Baden, Germany. The said witness, Dr. Oswald Schmiedeberg, aged 72 years, being duly sworn, deposed as follows:

Interrogatory No. 1. State your place of residence and occupation: and state how long you have followed that occupation.

A. I am residing at Strassburg, Alsace, and my occupation is Professor and Director of the Pharmacological Institute in the University of Strassburg, Alsace, since 1872.

No. 2. State the extent of your medical education and training, and what particular branch of medical science, if any, you have made a special study of.

A. I am Doctor of medicine and honorary Doctor of Laws (L. L. D.) of the University of Edinburgh, Scotland, corresponding member of the Royal Society of Medicine, London, and of the Philadelphia College of Pharmacy, Honorary member of the English Physiological Society; honorary and corresponding member of many other Academies and Societies of Science and Medicine in Germany, Austria, Italy, France, Russia, Sweden. My particular branches of medical science are Pharmacology, Materia Medica and Toxicology.

No. 3. Are you the author of any medical works or treaties, and if so, please give a list of them.

A. More than two hundred medical and physiological researches and treatises are executed and communicated by me and under my guidance by a number of younger investigators working in my laboratory.

No. 4. Have you ever made a study of the effects of caffeine on the human system, and have you prepared or pub-

lished any treatises or article setting forth the result of such study and investigation, especially with reference to the caffeine contained in Coca-Cola syrup? If you say that you have prepared or published such treatise, please state when and at whose instance you did so.

A. Among these works there are also some concerning the caffeine and among them a collected description made by me about the whole caffeine group in the Merichte der Deutzchen chemischen Gesellschaft in Berlin, and about the caffeine in my book "Elements of Pharmacology". Particular researches on account of Coca-Cola syrup were not necessary, because the caffeine in this syrup cannot act otherwise and is not to be judged otherwise than the caffeine in general. Such a special research of the Coca-Cola syrup on the physiological action of the caffeine, contained in the same would have pointed to a treatment of the question without knowledge of the matter, and a repeated analysis of the group would have been taken as a quite unauthorized difference against the exactness of the analysis made by Dr. Mallet, of the University of Virginia, and Dr. M. B. Bigelow, of the Department of Agriculture.

No. 5. In what beverages is caffeine found naturally, and to what extent is it consumed in those beverages throughout the world?

A. Caffeine is the constituent upon which depends the significance of coffee, tea and some other food materials. This significance is far more widespread than that of alcoholic beverages. In all parts of the world, coffee and tea, and other beverages containing caffeine, such a cola, Paraguay tea and guarana paste, are made use of by the most widely different races of mankind, by people professing all forms of religious belief, by men and women, by the young, without special restriction, whilst alcoholic drinks are prohibited to Mohammedans by religious rule, and women and children as well as many men, refrain from their use.

No. 6. Are there any diseases or ailments of the human race which can be held to be due to the use of beverages containing caffeine?

A. Notwithstanding the unparalleled wide distribution of these beverages, cases of illness from their use which can be held to be due to their content of caffeine, are not known.

No. 7. Taken in the quantities in which it is found in beverages like teas, coffee, etc., would you, from the observations and investigations which you have made, say that caffeine is a deleterious or harmful substance?

A. Caffeine, therefore, in the quantity in which it is taken with those beverages, may with entire certainty be

set down as harmless, on the basis of the experience obtained on so large a scale during several centuries.

No. 8. In this respect do beverages containing caffeine differ from alcoholic drinks and from tobacco?

A. In this respect the beverages containing caffeine are quite essentially distinguished from alcoholic beverages and from tobacco, the misuse of which so easily gives rise to cases of poisoning and of illness.

No. 9. In what way is your opinion as to the harmfulness of these beverages confirmed and explained?

A. The harmlessness of caffeine in the beverages under consideration is confirmed and explained by the nature of its action. On this action depends the significance of these beverages for the human organism, and it has led in all parts of the earth, both civilized and savage people, to instinctively discover and use as beverage all plants which contain caffeine or the analogous theobromine of similar effect.

No. 10. Are the effects of theobromine similar to those of caffeine?

A. The theobromine contained in cocoa and chocolate has quite similar effects on the body as the caffeine.

No. 11. Upon what parts of the human system does caffeine act, and in what way?

A. The action of caffeine, with which only we have here to do, concerns at the same time, in a quite peculiar way, the central nervous system and the muscular system on which the movements of the body depend.

No. 12. If the nerves and muscles become fatigued through exhausting or long continued exercise in what way is it possible to continue their further exercise?

A. When muscles and nerves are fatigued by severe or long continued activity, activity can be continued, if at all, by the most strenuous exertion of the will.

No. 13. How and in what way does caffeine, in the quantities in which it is taken in the beverages referred to, affect the muscles and nerves and intellectual faculties with respect to their ability to withstand fatigue?

A. Caffeine, in the quantities in which it is taken with beverages, so acts upon the nerves and muscles that the feeling of fatigue disappears, while the stimulus of the will more easily reaches the muscles and the supply of energy of the latter can be more easily and efficiently used than in the condition of fatigue without caffeine. Under the influence of the latter also the more strenuous intellectual activities are more easily prolonged, and the feeling of mental lassitude is less perceptible.

No. 14. Does caffeine, in view of its effects as heretofore

explained by you, act as a means of refreshing the nerves, mind and muscles?

A. Caffeine is a means of refreshing bodily and mental activity, so that this may be prolonged when the condition of fatigue has already begun to produce restraint and to call for more severe exertion of the will, a state which as is well known is painful or disagreeable.

No. 15. Are the muscles and nerves directly affected by the use of caffeine, as commonly taken in beverages, or are they in all cases necessarily exerted when caffeine is taken in such quantities?

A. The caffeine as commonly taken in beverages, does not spure the muscles directly to increased activity, therefore they are not necessarily exerted when caffeine is taken in such quantities.

No. 16. If you say that the use of caffeine, in the quantities stated, does not directly affect the nerves and muscles, in what manner and under what conditions does it affect them, indirectly, if at all?

A. The caffeine, in quantities stated, affects the muscles and nerves indirectly by increasing their irritability and they respond more easily to every irritation.

No. 17. Does the use of caffeine, in the quantities stated, enable the muscles and nerves to respond more readily to the impulses of the will? And would its use in the quantities stated, induce activity of the nerves and muscles without the co-operation of the will?

A. The use of caffeine in quantities stated in consequence of increased irritability enables the muscles and nerves to respond more easily to the impulse of the will. Its use in the quantities stated would not induce activity of the muscles and nerves without the co-operation of the will.

No. 18. If no work is to be done after the taking of caffeine, as in tea or coffee, will the nerves and muscles remain passive, as if no caffeine had been taken?

A. If after the use of coffee or tea no work is done, as for example after taking coffee at the end of a dinner, muscles and nerves remain quiet as if no coffee had been taken. In such cases the pleasure which good coffee and tea procure are decisively in favor of their use.

No. 19. From your experience and investigation of the subject, would the continued use of caffeine, in the form of beverages, cause chronic diseases or other harmful effects on the human system?

A. This character of caffeine action makes it plain that these beverages do not injure the organism by their caffeine content, and especially do not by continued use cause

any chronic form of illness, as alcoholic beverages so easily do.

No. 20. Are there any ingredients in tea and coffee aside from caffeine which might affect the system, and if so, what they are and what effects might they produce?

A. If strong coffee and aromatic teas, especially the so-called green kind, produce on some persons agitation so that for instance after the use of these beverages in the evening such persons suffer at night from sleeplessness this does not depend upon the caffeine, but upon the ingredient from which the aroma and pleasant taste of well prepared coffee and tea are derived. There are persons who can not in general bear tea or coffee, while Paraguay tea, with its less agreeable taste, suits them well in spite of its containing caffeine.

No. 21. From your experience and the facts obtained by experiment, state if you can do so whether the amount of caffeine taken daily in the course of a lifetime by the habitual user of tea and coffee in the quantities in which it is ordinarily taken is injurious to health, or produces either acute or chronic poisoning, or weakens the body, or predisposes it to disease.

A. Experience and the facts obtained by experiment make it indisputable that the quantities of caffeine which are for the most part taken in with coffee or tea used daily for a whole life time are non-injurious to health, since they neither give rise to acute or chronic poisoning, nor weaken the organism so as to dispose it to attacks of illness.

No. 22. According to your experience what is the amount of caffeine usually taken by the user of tea or coffee per diem? And state if these quantities are in any way injurious or harmful?

A. A small cup of coffee of 150 ccm. — five ounces — which has been prepared from 15 grm. — 230 grains of coffee beans — contains 0.1 to 0.12 grm. — 1.5 to 1.8 grains of caffeine, and the same amount is contained in a cup of the infusion prepared from 5 to 6 grms. — 75 to 90 grains of tea leaves. If it be assumed that a man daily in the morning, at noon or in the afternoon and in the evening drinks altogether five cups of coffee or tea, or partly coffee and partly tea, he takes in this 0.5 to 0.6 grm. — 7.5 to 9.0 grains of caffeine. These moderate quantities are thoroughly harmless. Many persons, especially women, in countries where tea-drinking is wide spread, may easily bring the number of cups to double or even several times these figures. Let us assume that the maximum amounts to ten cups of tea or coffee or of both together. These contain 1.0 to 1.2 grm. — 15 to 18 grains of caffeine. Even

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such doses cause no disturbance of health if they be taken in this manner.

(The latter part of the answer to Interrogatory No. 22 and the Interrogatory No. 23 and answer thereto were excluded and will be found on page ——.)

No. 24. Assuming that a glass of a beverage known as Coca-Cola, as served at soda fountains, contains about one ounce of syrup, containing about 1.21 grains of caffeine, mixed with six or seven ounces of water; how many glasses of this mixture could be taken daily without any danger of detriment to the health on account of the caffeine contained therein?

A. According to the communications which have reached me about 30 grm.—one ounce of Coca-Cola, syrup, containing about 1.21 grains of caffeine, is used to a glass of about 210 ccm. of the beverage. From the stated quantities of caffeine which are taken daily by use of coffee or tea follows in the most positive way, that 200 to 400 grm. Coca-Cola syrup or 1,400 to 2,800 ccm. — 6 2/3 to 13 glasses of the beverage might be taken daily without any fear of injury to health from the quantity of caffeine contained therein.

No. 25. Has any analysis of Coca-Cola syrup been submitted to you, and if so, by whom were you informed that said analysis had been made, and state the contents of the syrup as shown thereby.

A. Coca-Cola syrup contains, by the accordant analyses of Dr. Mallette, of the University of Virginia, and Dr. Bigelow, of the Department of Agriculture, 0.19 to 0.24, in the average 0.22 or in round number 0.25 grm. — 3.8 grains of caffeine in 100 grm. — 1,540 grains of syrup.

No. 26. Would there be any difference in your opinion between the effect on the human system of Coca-Cola syrup, composed as stated in your last answer, and a corresponding quantity of tea or coffee, and if so what would be the difference and to what would it be attributable?

A. In certain respects the Coca-Cola syrup is even more harmless than the corresponding quantity of coffee or tea, since it does not, like these, produce agitation and therefore cause sleeplessness.

No. 27. Is there any advantage to the human race in encouraging the use of beverages containing caffeine, and if so state what it is.

A. Not only can no well-founded objection be urged against the manufacture of beverages containing caffeine by the introduction of this in any form, but rather should the extension of such manufactures be regarded with favor in the interests of the public welfare. Undoubtedly alco-

holic drinks belong to the most injurious beverages and the contest against their use and especially their misuse, is thoroughly justified. This can be most successful only by seeking to replace alcoholic beverages by other harmless beverages. Among such harmless beverages the most suitable with which to take up and carry through the war against alcoholic drinks, are coffee, tea, cocoa, chocolate, and in general all natural or artificial beverages which contain caffeine or theobromine on account of their advantageous and agreeable effect above described. Carbonated waters, for example, which are taken with pleasure for their refreshing action, will not fulfill the purpose in question, since they exert none of the special effects upon the organism that tea, coffee, etc., do. In the contest with alcoholic drinks it is of importance that the beverages which are to replace them shall be harmless, contain caffeine or theobromine and also actually be consumed upon a large scale. In this way Coca-Cola may be of value.

No. 28. Do you know or can you state any other matter or thing which may be of benefit or advantage to the parties at issue in this cause, or either of them, or that may be material to the subject of this your examination, or the matters in question in this cause? If so, set forth the same fully and at large in your answer.

A. I do not know of anything to add.

CROSS INTERROGATORIES.

Q. No. 1. Are you acquainted with the substance that is generally recognized by the laity and the profession and spoken of as caffeine?

A. I am not aware of what the laity is thinking about caffeine. The opinions of the professional men are familiar to me.

Q. No. 2. State whether or not it is a drug.

A. Yes, caffeine is also a drug.

Q. No. 3. State whether or not it is a food in any sense, if so what?

A. The caffeine is the active constituent upon which depends the significance of coffee and tea as soft drinks. It relieves the activity of the body when the same is fatigued.

Q. No. 4. Is caffeine prescribed for healthful persons?

A. For healthful persons the pure caffeine is not so prescribed as for sick ones.

Q. No. 5. If your answer is yes, why, and if your answer is no, why not?

A. Healthful persons take the caffeine in the form of foods of different kind and do not need therefore pure caf-

feine.

Q. No. 6. What are the most prominent effects of caffeine on the human system?

A. The caffeine increases in the doses which are in consideration the irritability of the nervous system and at the same time endows the muscles with capacity for increased activity.

Q. No. 7. Does it tend to produce sleeplessness and wakefulness sometimes called insomnia?

A. In quantities in consideration pure caffeine does not effect sleeplessness. Sleeplessness, wakefulness and insomnia are synonymous conceptions.

Q. No. 8. Suppose a nervous individual, or growing child, during the period of adolesence, or high-school pupil doing hard work, should repeatedly take doses of caffeine in the form of a soft drink, containing say 1.20 gr. of caffeine, what would be the result?

A. To nervous persons, growing children, during the period of adolesence, as well as high-school pupil doing hard work even repeated doses of 1.20 grains of pure caffeine taken in the form of soft drinks would be less injurious than the corresponding quantities of coffee or tea. If these also would be injurious depends upon the individuality of the persons.

Q. No. 9. Is it not well recognized that children should refrain from taking stimulants like caffeine?

A. Coffee and tea are not given to children because they have a stimulating action. This action does not depend upon the caffeine but upon other constituents. The caffeine is not a stimulant.

Q. No. 10. If caffeine produces sleeplessness or wakefulness and a child or nervous individual takes doses as above from day to day, what might be the tendency; and what the effect of such a course on the nervous system?

A. Nervous persons are sometimes given caffeine when they suffer from migraine. A daily use of the doses here under consideration would not be injurious, but would have no purpose. As to what influence the daily use of pure caffeine would have on children experience is wanting.

Q. No. 11. If this stimulation is continued from day to day, would it not have a tendency to lower the vitality of the individual? If not, would it increase the vitality, and if so, why and how?

A. In question No. 9 is mentioned that the caffeine is no stimulant, as it is sometimes taken for. The small quantities of caffeine will have no influence in the manner mentioned.

Q. No. 12. Suppose an individual afflicted with tuberculosis should consume a soft drink containing 1.21 gr. caffeine from day to day; would the influence of such a beverage be beneficial or otherwise? If you answer in the affirmative, give reasons why, and if in the negative state the reasons.

A. The daily use of beverages containing 1.21 grains of caffeine will not be injurious to those afflicted with tuberculosis, provided these drinks do not contain at the same time irritant substances, such as strong coffee and green Chinese tea.

Q. No. 13. Is or is not the condition frequently known as nervousness the forerunner of many diseases?

A. The caffeine causes, in the quantities herein considered, no nervous conditions, and if these are recognized as forerunner of diseases, the caffeine has nothing to do with it.

Q. No. 14. What do you understand by the term "metabolism"?

A. By metabolism we understand the transformation of food materials and organ constituents in the organism.

Q. No. 15. Does caffeine influence metabolism favorably or otherwise?

A. Caffeine in large doses influences the metabolism only indirectly; in the quantities herein considered not at all.

Q. No. 16. Does caffeine influence favorably or otherwise carbohydrate metabolism?

A. What is said in answer 15, concerns also carbohydrate metabolism.

Q. No. 17. Does caffeine in any way influence the important constituents eliminated in the urine, and if so, why, and what is the significance of it?

A. The caffeine is used in diseases as a diureticum, and has in this respect an influence on the excretion of the urinary constituents, but not on their formation.

Q. No. 18. State from your own knowledge, experience and observation if the administration of one or more glasses of a soft drink containing from 1.21 to 1.25 grains of caffeine customarily served with carbonated water at soda fountains with no ingredient neutralizing the effects of caffeine might be or would become deleterious to health.

A. Taken in the mentioned quantities with carbonated water at soda fountains, the caffeine also in this form is not injurious. Substances which neutralize the effects of the caffeine do not exist.

Q. No. 19. Would one or more glasses of a beverage of the above character be favorable or otherwise to meta-

bolism?

A. These drinks, would, if they generally do it, act by the quantity of water taken, on the metabolism; and not otherwise.

Q. No. 20. If your answer to the above is "Yes", give reasons why, and if in the negative give reasons.

A. The answer to this question is the same as that given in question No. 19.

Q. No. 21. Is or is not caffeine a stimulant to the nervous and muscular tissues of the body?

A. The caffeine is not a stimulant like for instance camphor, it raises the excitability of the nerves, which is not to be confounded with stimulant action. It affects the muscles in the same manner as described in the answer to question No. 6.

Q. No. 22. Is caffeine beneficial or otherwise to the human system of a healthful person; and why?

A. To healthful persons, the caffeine can be beneficial, because it is able to diminish the state of fatigue.

Q. No. 23. Having once established the necessity of a stimulant for relieving fatigue, does it or does it not become necessary in many instances to repeat stimulation in order to overcome the condition?

A. If there is no material body, or mental fatigue, the caffeine action is not evident. There is no necessity to diminish the fatigue by caffeine, instead of removing it by rest and recovery.

Q. No. 24. Is or is it not a fact that cocaine relieves fatigue, and stimulates the individual?

A. The cocaine taken internally could remove or soften the sensation of fatigue, but not increase the activity like caffeine.

Q. No. 25. Strychnine is a stimulant to the nervous system, is it not?

A. Strychnine increases, in small doses, the irritability of certain parts of the brain, and therefore is sometimes used for paralysis. In greater doses it causes paralysis. It has no influence on the muscles.

Q. No. 26. Are the stimulations of cocaine and strychnine beneficial or otherwise to a healthful person?

A. Cocaine and strychnine are not used on healthful persons. The misuse of cocaine in the sense as morphine is used by the morphine fiends, causes very bad consequences.

Q. No. 27. Would you consider the addition of caffeine to a syrup to be used in the manufacture of a soft drink to be dispensed promiscuously to the general public at soda fountains beneficial to health, or otherwise?

A. This question I have answered very particularly as will be found in question No. 27 of the interrogatories of the defendant's attorney.

Q. No. 28. Dr. H. A. Hare, in his text-book entitled "Practical Therapeutics," 13th Edition, page 144, in speaking of the "Untoward Effects" of caffeine, says:

> "Caffeine often produces so much insomnia given in cases of cardiac disease that its use has to be discontinued. If its use is persisted in, it may produce a condition of delirium closely resembling that of alcoholism; and if too large doses are used, or it is too frequently repeated, it may cause a decrease in urinary flow by causing spasm of the renal vessels. The writer has also seen a marked rise of temperature follow its use in the doses of 2 grains (0.12) three times a day, but this is unusual. In certain persons the habitual use of coffee may cause insomnia, tremors, palpitation, tinnitus, aurium, gastralgia and emaciation."

Do you agree with the views as set forth by Dr. Hare? If your answer to the above is "no", give your reasons specifically and in detail.

A. Caffeine acts very well on persons with heart disease when it is used in proper cases. In other cases of heart disease it does not act wholesome, and even can change the condition of the sick for the worse, by sleeplessness and other grave symptoms. The exciting action of strong coffee and tea is imputed by many authors to the caffeine. See the answer to question 7 of the cross-interrogatories and the answer to question 20 of the interrogatories.

Q. No. 29. State whether or not caffeine is poisonous in its tendencies?

A. Caffeine is like many other substances, which are used in daily life as for instance spices, mustard, in great quantities, poisonous, but not in the quantities which are herein under consideration. Particularly, coffee, tea and Coca-Cola cannot be considered poisonous. Arsenic is very poisonous. Gibbs and James found in California wines 0.04 to 0.20 miligramm arsenic in one liter, and in claret wine from the eastern section of the United States even 0.4 milligramm in one liter. Nevertheless such wines cannot be considered poisonous or even as a poison, otherwise its sale should be prohibited.

Q. No. 30. Assuming that caffeine is served in quantities of from 1.21 to 1.25 grains per glass promiscuously in soft drinks, at soda fountains, would you or would you not consider and believe that it might be injurious to the public health?

A. In stated quantities the mentioned drinks would not be injurious to the public health, but rather useful. See the answers to the questions Nos. 26 and 27 of the interrogatories.

Q. No. 31. From your knowledge and experience does caffeine increase the toxcity of other drugs such as, for example, acetanilid, a common ingredient of headache mixtures?

A. In such a mixture every substance acts for itself, and the degree of their action depends upon the quantity of each ingredient.

Q. No. 32. In your experience is the toxicity of caffeine increased in an individual receiving an insufficient amount of food, that is, in a state of greater or lesser starvation?

A. The activity of caffeine would not be increased in a state of starvation of the individual.

Q. No. 33. In your experience does caffeine stimulate or inhibit the putrefaction changes in the intestinal canal?

A. Caffeine does not reach the parts of the intestinal canals, where the putrefaction takes places, and in this regard it is not to be considered.

Q. No. 34. Has or has it not a tendency to relieve fatigue?

A. For the answer to this question see the interrogatories 13 to 18 and cross-interrogatory 3.

Q. No. 35. If your answer to the above is yes, describe in what manner it relieves fatigue, and if your answer to the above is in the negative, give your reasons why.

A. For the answer to this question see the interrogatories 13 to 18 and cross-interrogatory 3.

Q. No. 36. If caffeine relieves fatigue and by so doing enables the individual to do more work, is the work done at the expense of the body.

A. For the answer to this question see interrogatories 13 to 18 and cross-interrogatory 3.

Q. No. 37. What is the cause of fatigue?

A. The cause of fatigue is the consumption of substances in the muscles and nerves by its action.

Q. No. 38. If fatigue is due to the conditions you have described, is it or is it not true that a stimulation of the nervous and muscular system will increase the agents which cause fatigue and proportionately lower the reserve forces of the individual?

A. See the answer to this question in interrogatory 13.

Q. No. 39. Will or will not the repeated stimulation with the results set forth above be more or less of a drain on the physiological reserve of the individual?

A. The consumed substances must naturally be re-

placed by food.

Q. No. 40. Is it or is it not a fact that the lowering of the physiological reserve of the individual renders him more liable to disease and less able to do efficient work?

A. When the sufficient replace by food takes place, no decrease of reserve substances appears, otherwise manual labor would be injurious, because it is necessarily connected with a great consumption of the physiological reserve materials.

Q. No. 41. If in your examination in chief you say you have written any treatise touching caffeine or dealing with it, please file a copy thereof as a part of your deposition.

A. See the answer to this question in the interrogatories Nos. 3 and 4.

Q. No. 42. If you answer in chief that you have had occasion to write any article or treatise dealing with caffeine as contained in Coca-Cola syrup, please file a copy of such article or treatise and state occasion for your writing or publishing the same.

A. Outside of this opinion I have written nothing on Coca-Cola.

Q. No. 43. What connection have you with the manufacture or sale of Coca-Cola, and if you say you have none, who induced you to write or publish the article or treatise and for what purpose?

A. I have no connection in the manufacture or sale.

Q. No. 44. Have you had any conference with any representative of the Coca-Cola interests or Coca-Cola Company, and if so, with whom and what was the date of your last conference?

A. No, I do not know any person of the Coca-Cola Company.

Q. No. 45. When and under what circumstances were you advised your deposition would be desired in this controversy, and by whom?

A. Through an acquaintance of mine, Dr. Louis Schaefer, President of the Schaefer Alkaloid Works, of Maywood, New Jersey, who wrote me a letter in the fall of 1910.

Q. No. 46. Is Coca-Cola used extensively in your section and if so, for how many years has it been used?

A. I know nothing about the use of Coca-Cola in my country.

Q. No. 47. If you state in answer to Question 23 in chief that there is prescribed a "maximum daily dose of caffeine," state for what ailment or under what conditions such maximum daily dose is prescribed, and for what character of person.

A. The maximum doses of caffeine mostly prescribed by migraine.

Q. No. 48. Is it not true that some systems will tolerate more caffeine than others, and that as a rule adults will tolerate more than children?

A. Like against other remedies, some individuals probably are more tolerant against caffeine than others. Children are in general less tolerant than adults. But there are no particular experiences in regard to caffeine along these lines.

DR. OSWALD SCHMIEDEBERG.

(The following proceedings were had after the reading of Question 19 on direct examination:)

Mr. Miller: We object to that question and answer. We did not bring coffee into this case. We tried to keep it out.

The Court: But I let it in.

Mr. Miller: Now they are trying to make it appear that this is not as harmful as something that they brought in themselves. My point is, this is not a comparative case. We are not comparing this with anything else, and they brought coffee and tea into the case, and they are now trying to show that this is not as harmful as those.

Mr. Sizer: Not at all.

The Court: The question asked was whether the use of caffeine in beverages was harmful.

Mr. Miller: Well, see what the answer is.

(The answer was thereupon read.)

Mr. Miller: And to that portion of the answer that deals with alcoholic beverages, I say that is not competent. I do not think that is a matter of inquiry; because this does not do as much harm as something else does not make it competent.

Mr. Sizer: I submit it is not improper for the witness to illustrate the effect of these beverages as contrasted with other beverages.

Mr. Miller: If counsel insists upon it, I will withdraw the objection.

The Court: Very well.

(The reading was thereupon proceeded with, and after the reading of Question 20:)

Mr. Miller: Now, I object because I say we have not been permitted to introduce certain evidence as to the results of tea and coffee because it has been shown that they contain certain other things that might be injurious.

The Court: You are mistaken. The proof was excluded because it did not respond to the question asked the witness on his examination.

Mr. Miller: Now, they ask whether or not there were certain ingredients in tea and coffee which would be more harmful than the Coca-Cola.

The Court: No. As I gather it, the point is this: You say caffeine is injurious; they say no, it is not, because everybody takes tea and coffee and are not hurt. You reply with cases where tea and coffee drinkers have suffered, and now they want to show that the injury to the tea and coffee drinkers was due to other things than to the caffeine in the tea and coffee.

Mr. Miller: We want to go on record as excepting, because we were not permitted to introduce those witnesses.

The Court: I did not intend to re-rule, and I do not think I did rule, that you could not produce any experts to express an opinion about tea and coffee. I have never ruled that out except that on the cross-examination of a witness who was expressing an opinion about the injurious effects of caffeine I held that you could not cross-examine him by showing articles written by men not talking about caffeine, but about tea and coffee. That is all I ruled. I never meant to preclude the Government from taking up the subject of tea and coffee.

Mr. Miller: I quite understand the ruling.

(After the answer of Question 22 of the Direct Examination:)

Mr. Miller: To the last part of that, as to the Pharmacopœial matter, we object.

(The Court sustained the objection.)

Mr. Asa Warren Candler: Twenty-three, question and answer, would also be ruled out then for the same reason.

(The latter sentence of the answer to Question 22 and Question 23, and the answer thereto, which were ruled out, were as follows:)

"In agreement with this is the direction of the Pharmacopœia of the German Empire that the largest daily dose of caffeine should not exceed 1.5 grm.—23 grains."

"Q. 23. What is the maximum daily dose of caffeine according to the Pharmacopœia of the German Empire?"

"A. The daily dose of caffeine according to the Pharmacopœia of the German Empire is 1.5 grm.—23 grains."

(After Question 24:)

Mr. Miller: I object to that without the communications are in evidence. That is the primary evidence and he should be required to produce it.

The Court: I do not know what the answer is; it is merely that one ounce of Coca-Cola is mixed with certain things, I understand.

(After reading of answer to Question 24 on the direct

examination:)

Mr. Miller: I object to part of that answer as argumentative. He answered in the first few lines that it would be harmful and then he proceeds with an analysis, and that would be incompetent.

Mr. Sizer: He is asked how much of that beverage might be taken directly without fear of injury to health, and he says six and a half ounces.

Mr. Miller: I do not care for that, but what he says he bases it on.

Mr. Sizer: He just shows his information as to what it contains.

The Court: I think the exception should be overruled. The witness is just stating what he did.

(After the entire deposition was read:)

Mr. Sizer: Your Honor will notice that they cross-examined the witness about the pharmacopœial dose, and now I ask that his answer on direct examination, which was excluded, should be allowed.

The Court: I have heretofore held that where a deposition is taken away from the Court and there is no chance for the Court to rule on objections, that counsel may make objections and not read the cross-examination in reference to that. Counsel cross-examine subject to the right to not read it if they do not want to.

Mr. Sizer: But he read the answer. The point is this: We ask what is the pharmacopœial dose.

General Cox: And we didn't ask anything on cross-examination about that.

Mr. Sizer: Yes; on cross-examination counsel for the Government ask in what manner that dose is prescribed.

Mr. Candler: It was in Question 47 of cross-examination, and then you can look back and see Question 23 in chief.

General Cox: We ask for the maximum dose he prescribed.

Mr. Sizer: No, not what he prescribed.

The Court: Gentlemen, I will look at it—let me see it. Question 47 refers back to Question 23, which does refer to the pharmacopœial dose. If the Government wants the answer in and reads it, that admits Question 23.

Mr. Miller: But we do not want it in.

The Court: But General Cox read it and says that you want it in.

General Cox: I didn't say that—it was read, but I thought it referred to the dose he prescribed.

The Court: No, it does not. Then it is understood that the Government does not want to read that answer 47

and they have a right not to read it, and the answer to 47 is excluded. The answer on its face does seem to refer to his prescription, but he referred back to the question on direct examination, which shows differently.

J. L. LYNCH,

recalled by the Government in rebuttal, testified as follows:

RE-EXAMINATION,

BY MR. MILLER:

Q. Mr. Lynch, I will get you to state if you heard the testimony of Mr. Howard Candler in this case.

A. No; but I read it.

Q. I will get you to state whether or not there was any cheese cloth strainer over the pipe or that portion of the container from which the Coca-Cola syrup was admitted at the time it was being transmitted and transferred into the barrels when you were in this factory just prior to this seizure and when you were last in the factory prior to the seizure.

A. There was not.

Q. Now, how were these pipes that extended from the basement—I mean, from the first floor, the floor you went in on when you went in from the street going up the steps that led from there down in the basement constructed with reference to the floor itself?

The Court: Is that diagram still on the blackboard?

Mr. Sizer: Yes, it is under there.

The Court: I suggest that he refer to that, so as to facilitate the examination. Turn those others back. I think a copy of that diagram ought to be put in the record.

Mr. Sizer: We will have a copy made by Mr. Candler and have it submitted to adverse counsel and put in the record. Take that tree off of there, Mr. Lynch.

Mr. Miller: Yes, but don't destroy that one, please.

BY MR. MILLER:

Q. I will ask you to state, Mr. Lynch, how these pipes were constructed with respect to the floor which surrounded them.

The Court: Which pipes?

Mr. Miller: I am talking about the pipes which led to the first floor, or what is known as the first floor, that you enter on when you go from the street down into the basement which contains a mixing tank and the containers.

The Witness (indicating): This pipe here and this pipe here went through the floor. Neither one of them were tight.

BY MR. MILLER:

Q. You mean by "this pipe here and this pipe here," what?

A. This pipe, the outlet of the syrup tank on the first floor; this here connects with the funnel and goes down into the mixing tank. Neither one of these pipes were tight in the floor; that is to say, they were not made waterproof. Any water on this floor would go down through there. The other tank does not show here that that was piped, and there are various water pipes coming up through this floor, too.

Q. Now, when you speak of the tank on the first floor, do you mean the kettle, the cooking kettle?

A. No; there is a patent cooling tank which was sometimes used when they were rushed for Coca-Cola syrup in addition to these open tanks in the basement. This was not used except when they were crowded, because, as it was stated to me, it was not as economical as this was.

Q. Does that picture on the blackboard, prepared by Mr. Howard Candler, show all the pipes that lead from or extend to the first floor down to the basement where the mixing and containing tanks were held in suspension?

A. As I remember it, the toilet would be situated right about there (indicating). Those pipes went through that floor, too.

Q. State whether or not that diagram there shows all the tanks that—I mean, all the pipes, that led from one of these floors to the other.

A. No, sir.

Q. How many more tanks—I mean pipes—were there that led from one of these floors to the other?

A. Well, you could not see—several pipes came up through that floor.

Q. Now, state whether or not both pipes were tight, tightly surrounded by the floor, and if you made any observation in that respect.

A. They were not.

Q. Now, what would be the effect or result if water would be turned loose on that first floor with a hose as to where the water would go finally by the force of gravity?

A. It would go right down in the basement floor, the floor holes here (indicating).

Q. State if you know whether or not any portion of it would go into the tanks below.

A. I could not say, Mr. Miller.

Q. State whether or not there was anything below the first floor surrounding these tanks—these pipes, I mean—that would have prevented the water running down or

dropping down from the first floor if it had been turned in on the first floor with a hose.

A. There was not.

Q. How frequently were you in there prior to this seizure, Mr. Lynch?

A. I was in there—in that factory, from July every week except one—from about the middle of July until that seizure was made. I was in there every day in the week, and then later on two or three days in the week.

Q. Were there ever any wash days—that is, water used or sprayed by the hose, so far as you observed?

A. No, sir.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. Do you say they had a water closet right over the syrup tank?

A. No, sir.

Q. Well, you pointed right over the syrup tank.

A. No. I could not show the perspective there.

Q. Now, Mr. Lynch, didn't Mr. Miller ask you where that toilet was, and didn't you put your finger right over the syrup tank?

A. I didn't mean to give that impression, that the toilet was over the soda—I mean, over the syrup tank.

Q. But that is where you pointed it.

A. Because it was not drawn well—I stated over here (indicating).

Q. Now, isn't it a fact, when Mr. Miller asked you where that water closet was, that you put your finger right up there over the top of the syrup tank?

A. I didn't intend to have put it over the syrup tank.

Q. Well, why didn't you say—didn't you leave the impression in answering, and didn't you put your finger right over the syrup tank?

A. Yes, sir, without any idea of that at all.

Q. Well, as a matter of fact, it is not there at all?

A. It is over here (indicating).

Q. Well, why didn't you state when you were asked where the water closet was, that it was to one side of the building and away off from the syrup tank—that is a fact?

A. Yes, away from this syrup tank, you mean?

Q. Yes, from any of them?

A. No, right here in reference to this syrup tank—with reference to the cooling tank—it was not very far from that cooling tank; no, sir.

Q. It was away over under the elevator, on that side?

A. That cooling tank is not shown; that plan does not

show the relative position of the cooling tank.

Q. And your finger did not show the relative position of the water closet and the tank?

A. I didn't mean to convey that idea, that it was there.

The Court: Well, that is enough about that.

BY MR. SIZER:

Q. How lately were you in that factory?

A. I was in there last week.

Q. You went down last week?

A. Yes, sir.

Q. And did you go into that factory?

A. Yes, sir.

Q. Well, that factory is operated by another concern than the Coca-Cola Company now?

A. It is not in operation.

Q. Closed entirely?

A. Yes, sir.

Q. Did you go through it?

A. Yes, sir, I did.

Q. Well, it has been operated by another soft drink plant since the Coca-Cola Company left it?

Mr. Miller: I object to that.

The Court: The objection is sustained.

Mr. Sizer: He has been down there to see the situation, and I wanted to show that since the Coca-Cola Company operated there that the plant has been operated by a different concern.

The Court: I do not understand that the witness has testified as to conditions now, but if he has, it would be incompetent.

BY MR. SIZER:

Q. Why did you go down there last week?

A. I was in Atlanta on other business and there had been contradiction about this toilet room, and one of your witnesses stated that there was one upstairs and one somewhere else, and I knew there were two there.

Q. You went down to ascertain the condition of the toilet room?

A. No, sir.

Q. What did you go there for?

A. I was in Atlanta on business and went down to that factory.

Q. You went to that factory for that purpose?

A. Yes, sir.

Q. And you are testifying here today from what you found there last week?

A. No, sir; when the Coca-Cola Company operated it.

Q. Well, what did you go down there for last week?

A. To see whether possibly there might have been some change in the toilet arrangements from the time I was there until the present time.

Q. Well, as a matter of fact, it has been a year and a half since this seizure took place?

A. No, sir, not a year and a half since I was down there.

Q. Well, the Coca-Cola Company did not remain in that factory but a very few months after this seizure?

Mr. Miller: I object to that.

The Court: He seems to be testifying as to things he saw in the last few days.

The Witness: I did not mean to.

The Court: You did convey that idea—you said you had been there a good many times since the seizure.

BY MR. SIZER:

Q. Is it a fact that the Coca-Cola Company did not remain there but a few months after the seizure, and since that time another soft drink concern has been in there operating that plant?

A. I don't know how long they remained there.

Q. Well, you do know about another soft drink concern being in that factory?

A. No, sir—

Q. Do you mean to say you didn't know there was another concern in there?

A. Yes, sir.

Q. You have been around there inspecting the plant while the other concern was running it?

A. Yes, sir, I have.

Q. Now, you say there are two toilet rooms or closets, one of them is down in the basement in another room, this one in which this mixing tank is surrounded by—isn't it?

A. Well, yes.

Q. You were there last week?

A. Yes, sir.

Q. Now, you were there last week?

A. Yes, sir.

Q. In a different part of the basement?

A. Yes, sir.

Q. And it has got a fire wall between the basement in which this mixing tank is located and the room in which the closet is located?

A. I do not know whether it is a fire wall.

Q. Well, it is a forty-inch wall?

A. No, it is a sort of arch arrangement.

Q. A forty-inch wall?
A. I don't know.
Q. Has it not got a fire door, a double door, a door on each side of the wall?
A. I don't remember.
Q. You didn't examine that when you were down there last week?
A. No, sir, I did not.
Q. Well, you do remember seeing distinctly about that arch?
A. I remember the arch. I don't remember opening any doors going in from your basement where your mixing tank was to the toilet room.
Q. You don't remember that?
A. No, sir.
Q. But you do remember the arch there?
A. Yes, sir.
Q. It is absolutely impossible for you to remember whether there is one door or two doors?
A. I don't think there are two.
Q. Was there any door?
A. There could have been.
Q. You don't remember?
A. No, sir.
Q. And although you were there last week?
A. Yes, sir.
Q. And you saw no strainer on the pipe?
A. What pipe are you talking about?
Q. The funnel that went into the barrel.
A. You mean, any strainer on the pipe—I was not asked that question. I was asked about the arrangement by which the syrup was filled into the tank from the barrel.
Q. Now, do you mean to say that there was no strainer on that funnel that went down from the top of the barrel?
A. I said there was no cheese cloth.
Q. How do you know?
A. I paid particular attention to it.
Q. What was there on it?
A. Nothing at all.
Q. Nothing at all on it?
A. No, sir.
Q. How many times did you see the barrel—
A. (Interrupting) Well, I saw it several times.
Q. And when was it that you examined that funnel to see whether there was any cheese cloth on it or not?
A. When I went in to make the inspections.
Q. Which ones?
A. The first and second ones.

Q. Did you make it on every inspection you were there?
A. No, sir.
Q. Well, they used the same funnel all the time?
A. That I don't know.
Q. Do you know whether they inspected all the funnels or not?
A. The funnel I say they used was to fill the barrels; no cheese cloth on it.
Q. Did you see the funnel sticking in the barrel?
A. Yes, sir.
Q. Did you take it out?
A. That was not necessary.
Q. I say, did you take it out?
A. I looked into it.
Q. Did you take the funnel out and look at it to see if there was any cheese cloth there?
A. No, sir.
Q. You looked at it down through the barrel and did not see the cheese cloth?
A. Yes, sir.
Q. And it is on that kind of inspection that you undertake to come here and swear that there is no cheese cloth there?
A. I swear that there was no cheese cloth there used on that funnel.
Q. And so it is on each particular one of these trips you went and looked down through that funnel?
A. When I made the two sanitary inspections.
Q. How far apart were those two?
A. One in July and one after this shipment was made.
Q. And you looked through the funnel, down through it?
A. Yes, sir.
Q. Well, it was dark on the inside of the barrel?
A. On the inside of the barrel?
Q. Yes; there was no light on the inside of the barrel?
A. No, sir.
(Witness excused.)

Mr. Miller: We will call Doctor Kebler back to the stand.

DR. L. F. KEBLER,

recalled as a witness in rebuttal by the Government, testified as follows:

RE-EXAMINATION,
BY MR. MILLER:

Q. Doctor Kebler, I will ask you if since Dr. Marshall's testimony in this case you have had occasion to examine

and compare the works on toxicology that are written in the English language with those that are written in foreign languages, such as French or German.

A. I have.

Mr. Sizer: That is not a matter of rebuttal and they cannot bring him in here and bring in textbooks to sustain him.

Mr. Miller: No, I am not intending to do that.

Mr. Sizer: I submit it is immaterial whether he has examined the textbooks or not, if they do not propose doing that.

Mr. Miller: On page 1868 of the testimony of Dr. Marshall he stated that the textbook—and I will read literally from the transcript—in response to a question (reading):

> "Q. Now, Doctor, is the substance caffeine considered or treated in the literature on the subject of toxicology or by persons familiar with that science as a toxic substance, and if it is in any way, state in what connection.
>
> "A. In the textbooks on toxicology published in the English language no reference is made to caffeine as a poison because these books have been written particularly with the idea of describing substances that are ordinarily known as poisonous substances"—

and so forth. I propose to show by this witness that English-speaking toxicologists, or a number of them, deal with this substance.

Mr. Sizer: That was in response to Dr. Kebler's testimony on his former examination. He was asked whether there was any work that classed caffeine as a poison or toxic substance, and he undertook to give a list, and he stated, as I recall now, there were a number of foreign works and German works and possibly two American works that describe caffeine under the head of "Toxic Substances," and on that point we examined Dr. Marshall. That was only in answer to Dr. Kebler's testimony.

Mr. Miller: My question is whether or not there is any difference or distinction drawn between the two, and that is what they brought out by this witness that they examined, and he undertook to draw a distinction, and drew that distinction as to tartaric acid and other substances. I propose to show by this witness that no such distinction exists, and Dr. Marshall gave a list of American toxicologists which treated it as a substance. I was not prepared to ask him on examination in chief what books classified it as a toxic substance. My question is to show the distinction which Dr. Marshall drew did not exist.

The Court: Without giving a list of these books, you will be permitted to ask the witness that question. We will not have all these books in this case.

BY MR. MILLER:

Q. I ask you, then, Dr. Kebler, whether or not there is any distinction drawn, upon an examination of the authorities, between those in the English, those in the German and French or other foreign texts, as to whether or not caffeine is a poison—is a toxic substance?

A. I have found no difference. They are all written on the same principle, the same basis. One man may include one poison and another man may leave it out, but as a general proposition they are all based on the same general basis or proposition.

Q. I will ask you if you have examined Brundage, a manual of toxicology; Vaughan's work on solar toxins, Witthaus & Becker—

The Court: I have excluded all that without your reading it.

Mr. Miller: I merely wanted to show that they were English-speaking works.

The Court: I allow the witness to make a general answer, just as I allowed the other witnesses to make them. Now, the jury has that before them.

Mr. Miller: All right; note an exception.

BY MR. MILLER:

Q. Now, as a doctor of medicine, I will ask you whether or not one four-hundredths of a grain of cocaine would produce an appreciable effect if taken in an ounce of Coca-Cola syrup, either with or without 1.21 grains of caffeine.

Mr. Sizer: I object to that question unless the witness qualifies as a pharmacologist. I do not understand that he has done that.

Mr. Miller: He has qualified once.

Mr. Sizer: Furthermore, it is original matter and not matter in rebuttal.

Mr. Miller: I never brought Brundage out until the cross-examination.

The Court: I do not think it is matter in chief. It is to meet your theory of the distinctive use. That is the object, as I understand it.

Mr. Sizer: I submit the witness has not qualified to speak on the physiological effect of it, nor has he qualified as a pharmacologist.

Mr. Miller: I did not ask about the physiological effect, but simply whether it would produce an appreciable ef-

fect. He is a doctor of medicine and he gave his qualifications in chief.

The Court: He can express his opinion.

A. In my opinion, there is no dose of cocaine so small that it will not have an appreciable effect. Therefore one four-hundredth of a grain would have an effect. I did not want to say an appreciable effect. It has an effect, although it might not be observable.

The Court: If it is not an appreciable effect, it is excluded. We are only dealing with effects that are appreciable.

BY MR. MILLER:

Q. What would that effect be?

Mr. Sizer: I object to that.

The Court: If he cannot say it will have an appreciable effect, I exclude it.

BY MR. MILLER:

Q. If taken in connection with 1.21 grains of caffeine, in your opinion would it or not have an appreciable effect or intensify the effect of caffeine, and if so, state why?

A. It would have a tendency to increase the effect of caffeine, for the simple reason that cocaine is a more powerful drug than caffeine, and the two act in a very similar manner on the various cells.

Mr. Miller: Page 429 of this witness' testimony: He was presented by adversary counsel with two purported trade-marks of Coca-Cola, which I find are not copied into the transcript and I would be glad to have them presented now.

Mr. Sizer: The stenographer has them. We have not seen them since we offered them in evidence.

The Court: I saw them on my desk a day or two ago. I understood they were filed.

Mr. Miller: They are so identified and your Honor directed that they be marked and numbered, but what I want to do at this point is to see that from our point of view they are in the record.

The Court: I so understand it.

Mr. Sizer: If they are not in the record we want them in; but they were filed.

Mr. Hirsch: I understand the stenographer has them.

Mr. Miller: No, sir, they were not filed by Judge Candler. These are two with the trade-mark on them.

The Court: I do not remember but two.

Mr. Miller: Yes; Judge Candler filed various papers. We have copies that we can supply.

Mr. Sizer: The record shows they are in.

The Court: If the record shows they are filed, they are

in. The fact that they are not in the physical possession of the stenographer is immaterial.

(The exhibits referred to were copied in the testimony at the end of that day's proceedings and will be duly found on page 2379 et seq., of this record.)

BY MR. MILLER:

Q. Now, state whether or not you have had any experience in feeding rabbits through tubes. That is, administering Coca-Cola syrup, water and any other substances through a stomach tube such as exhibited by Dr. Morgan on the witness stand.

A. Yes, sir, I took part in those tests.

Q. State whether or not the rabbits were fed anything through the tubes except the Coca-Cola syrup or the other ingredients that were made up; that is, whether or not they received any part of their food through the tube.

A. Nothing except the Coca-Cola syrup, the caffeine solution, the Merchandise No. 5 of various strengths. The regular food they obtained in their customary, natural form.

Q. Those rabbits that did not receive any Coca-Cola syrup, but simply received water—I will ask you to state what, if any, signs of discomfort they exhibited as the result of feeding through the tube.

A. I did not see them exhibit any signs of discomfort.

Q. I will ask you whether or not in your observation and experience the feeding of rabbits—that is, the administration through a tube to rabbits of substances of this kind, is usual and customary.

Mr. Sizer: I do not understand that this witness is qualified as an expert rabbit feeder. He has not testified to any feeding experiments at all.

The Court: I think that exception is well taken; I do not recall any such testimony.

Mr. Miller: I do not recall a rabbit feeder that we had on the stand. Dr. Wesener fed three, and I will ask this witness how many have been fed by him or under his immediate observation.

The Witness: We fed sixty or seventy.

The Court: Unless he had some previous experience, it would not be competent.

Mr. Miller: Dr. Wesener didn't show anything but the three.

The Witness: I have had experience with the examination of animals for a great many years. I have made many experiments on animals when I was in the laboratory in Philadelphia.

The Court: Now he may express an opinion.

BY MR. MILLER:

Q. Now, I ask you whether or not the administration of a drug or any other substance for the purpose of animal experimentation, given through a tube in the way that these rabbits were fed that were the subject of Dr. Morgan's examination, in your opinion, was a proper, usual or customary method of administration.

A. It was a proper, usual and customary method of administering those products—products of that type.

Q. What experience, if any, have you had with respect to the determination of the tannins in the leaves of various growths, including the cola nut and the coca, and likewise the presence of the tannin in wine—California wine.

A. I have never—I have had—I have made many determinations of tannin in various bodies or substances, including various leaves and various plants.

Q. I will ask you to state whether or not the presence of tannin can be easily or readily determined in some of the substances or in all of the substances where it is contained. Explain fully.

A. If it is present in appreciable quantities there is no difficulty whatever in determining the tannin in almost any plant tissue.

Q. How is its presence determined?

A. There are various ways of determining tannin, depending upon the substance containing the tannin. For example, it can be determined by the well-known Hyde powder method and the method known as Proctor's modification of that test.

The Court: There is no question that the presence of tannin can be determined. Nobody disputes that and it is not necessary to go into that.

BY MR. MILLER:

Q. Now, I will ask you whether or not you determine the presence of tannin in what is known as Merchandise No. 5.

A. I determined its presence, but not the amount.

Q. Now, then, is there any reason why the amount could not be determined, and if so, tell why.

A. When I made my test I considered that it was so inappreciable that would be very difficult to estimate it with any degree of accuracy.

Q. State whether or not in your opinion the presence of coca tannin could be determined or established in a

mixture of tannins or among a mixture of tannins.

A. I would consider it impossible.

Q. As respects Merchandise No. 5, what were the and are the predominating odors, if any?

A. The aromatic odor coming from the wine and the toluols; that is, those are the apparent odors.

Q. Does wine have a distinct odor in this Merchandise No. 5?

A. It has a distinct wine-like flavor, yes.

Q. State whether or not the coca flavor in Merchandise No. 5 in your opinion is possible of ascertainment or determination, assuming that it be diluted according to the method given by Doctor Schaefer and that the extract Merchandise No. 5 be prepared according to Doctor Schaefer's formula.

A. I would consider it impossible.

Q. State whether or not in your opinion it could be recognized in such a mixture after it was made up with Coca-Cola syrup of the proportion in which it is made.

A. I don't think it can; I would consider it impossible.

Q. Comparatively speaking, what amount of flavor has cola?

A. Cola?

Q. I mean, coca?

A. Coca has a peculiar odor, but it is of a very moderate character. It is not permeating to the extent that an ordinary perfume would be, and the flavor accompanying raspberries and things of that character. It requires a considerable experience to detect a preparation prepared from coca.

Q. Now, if coca be treated as described by Doctor Schaefer, first with toluol and the other methods of treatment he described, in your opinion would or not the odor and flavor of the coca be lost in the treatment?

A. The flavor and odor would be appreciably diminished, but I hardly think it would be absolutely lost.

Q. Assuming that would be mixed with Coca-Cola syrup, then would it or not be lost entirely?

A. I have made that experiment and find that it is impossible to detect any flavor or odor coming from the coca.

Q. You have experimented with those same ingredients?

A. Yes, sir.

Q. What, if any, distinction is there between raspberry and strawberry flavor as described by Dr. Mallet and that of coca which would be present in the product known as Merchandise No. 5 produced by Dr. Schaefer?

A. Oh, the raspberry flavor is a very distinctive one, and if the raspberries were treated in the same manner as are the leaves for the purpose of preparing Merchandise No. 5, the residue would be virtually odorless. It would be without flavor, and virtually odorless. There is no trouble whatever—

The Court: I do not understand the bearing of that only that Dr. Mallet said you might have a recognizable flavor without being able to make a quantitative analysis.

Mr. Miller: I have no further question along that line if that is true. I know your Honor thinks it is true, but that is not the way I read the record.

The Court: Show me, then, and I will let you examine him further.

Mr. Miller: While they are looking up that, your Honor may hold this incompetent for the same reason:

BY MR. MILLER:

Q. I will ask you whether or not the flavor of raspberry and strawberry mixtures are easily recognizable and readily indicated.

A. They are.

The Court: I do not see the materiality of that and I exclude it. As I recall it, it was purely an incidental remark of Dr. Mallet illustrating that he could find things qualitatively without getting them quantitatively.

Mr. Miller: That is all, then, on the examination of this witness.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. You say you recognize the odor of wine about Merchandise No. 5?

A. Oh, yes.

Q. You don't mean to say that Merchandise No. 5 smells just like wine?

A. No, sir, but the characteristic odor of wine is very prevalent.

Q. But I say, the odor of Merchandise No. 5 is not identical with the odor of wine?

A. Not identical.

Q. And the taste is not identical?

A. I would not consider it so.

Q. Have you tasted Merchandise No. 5?

A. Oh, yes.

Q. Have you tasted wine also?

A. I have tasted it a couple of times.

Q. You know there is a difference?

A. So far as the aroma of the wine is concerned, I

hardly think there is any difference. The wine aroma comes out very particularly, especially if it is warmed.

Q. But do you mean to say that Merchandise No. 5 tastes just like wine?

A. No, sir, it does not taste just like wine.

Q. There is a difference in the flavor of the two?

The Court: It is admitted that there is a difference.

A. Yes, the toluol brings out the difference.

BY MR. SIZER:

Q. Do you say that you can detect the flavor and odor of toluol in Coca-Cola syrup?

A. I can in Merchandise No. 5.

Q. But in Coca-Cola syrup?

A. I have not been able to do that.

Q. But you can detect it in Merchandise No. 5?

A. Yes, sir.

Q. It is a very faint trace, is it not?

A. I remember of noticing that odor the very first time I set my nose to the barrel in Atlanta, Ga., and Philadelphia, and Dallas, Tex., and many other places, at divers and many times. I recognized the odor very clearly and perceptibly.

Q. Is there any other substance that gives the same odor as toluol?

A. I do not know of any that gives just that odor?

Q. Have you ever had much experience in detecting the minute differences in the smell and taste of different substances?

A. I have.

Q. In what line?

A. When I was in charge of the laboratory it was my duty to make investigations and experiments on the detection of various shades of odors and the aromas present in the various essential oils, and by that method to differentiate a given oil from another, and vice versa.

Mr. Miller: What laboratory?

The Witness: The Philadelphia laboratory I spoke of.

BY MR. SIZER:

Q. Now, you say you did not undertake to determine quantitatively the amount of tannin in Merchandise No. 5. Is it not true that although you cannot determine quantitatively the tannin in a particular mixture, you may be able to identify the tannin as coming from a particular source?

A. I consider that impossible—that mixture.

Q. Are there not different infusions that will react

differently with different kinds of tannins?

A. That is true.

Q. Are you prepared to say that the tests to which this mixture were submitted by the analyst who testified on behalf of the claimant, did not show or would not indicate the source from which those tannins came?

A. I consider it impossible.

Q. Have you tried that—

Mr. Miller: Let him answer.

A. From my general knowledge of tannin I consider that impossible.

BY MR. SIZER:

Q. Have you tried the particular tests to which those witnesses testified in order to determine whether or not the results they testified to were correct?

A. No, sir, I have never conducted those precise experiments that they enunciated in court.

Q. On what was it, then, that you undertook to express the opinion as an expert that those gentlemen did not ascertain the result to which they testified from the experiments they made?

A. I simply state in my opinion it was impossible.

Q. But your opinion is that of an expert and not that of a man who has made these tests?

A. Not on this particular mixture—yes.

Q. Would it not be possible to identify infusions of different tannins by comparing the results of the reactions of those infusions with all known reagents for tannin or tannin-like substances when they are separate and apart from one another?

A. That is possible, but when they are mixed—it is impossible.

Q. Could you not determine that by a process of elimination, determining first as to one kind of tannin and then as to another?

A. I know of no such method.

Q. You don't know of any such method?

A. I would consider it impossible.

Q. The simple fact that you do not know of such a method would not indicate it was absolutely impossible, would it?

A. There is no such method, in the first place. I am very well acquainted with those chemical reagents. I know the various reactions they will produce when applied to many tannins; I know the various shades, the degrees of shade that they develop, and it would be impossible to detect one tannin in the presence of two or

three more other tannins from different sources.

Q. Did you ever undertake to determine the tannin that is peculiar to coca leaves, in any way?

A. No, sir; I would not say I have.

Q. Did you ever undertake to experiment either qualitatively or quantitatively with the peculiar kind of tannin that exists in the cola nut?

A. I have made tests for that tannin, yes.

Q. You have never made tests, have you, for the coca tannin?

A. No, sir; I never have.

Q. What kind of tests did you make to determine the cola tannin?

A. Quite a good many—

Q. But I ask you about the ones you made?

A. I was just going to state. For example, you have the first thing—

Q. Don't tell what we have, but just what you did.

A. I am using the impersonal adjective.

Q. I would rather you use the personal and state what you used.

A. First of all, I determined whether or not the tannin is present.

Q. How do you determine that?

A. Various reagents.

Q. What reagents?

A. I am going to say. For example, ferric chloride, ferrous chloride, ammonia sometimes produces a peculiar reaction, lead acetate, those are the chief ones I recall just now.

Q. You used all those in determining the cola tannin, did you?

A. Yes. When we have a new tannin we usually apply—

The Court: He is not asking you for generalities. You said you examined the cola for tannin, and he wants to know just what you did do, and not what you might have done.

The Witness: I applied the usual reagents, ferric chloride, lead acetate, that is the common test; ferrous chloride is sometimes applied.

BY MR. SIZER:

Q. Are you undertaking to testify about any particular test that you made, or just giving the general result?

A. No, sir. I am talking about my own work.

Q. You recall that you did make a specific test for cola tannin?

A. Yes, sir.

Q. And you are undertaking to tell us how you proceeded to identify it?

A. Yes, sir.

Q. When was that?

A. That was probably ten years ago.

Q. I ask you whether it is a little difficult for you to detail all the processes?

A. Yes.

Q. You have not made a test of that kind in ten years?

A. Not for cola tannins.

Q. Now, about this Merchandise No. 5. You had been to Doctor Schaefer's works and seen the process by which Merchandise No. 5 was manufactured before you smelt the toluol in it, had you not?

A. No, sir.

Q. Have you ever seen any Merchandise No. 5 before you went down there?

A. Down where?

Q. Doctor Schaefer's Works.

A. Yes, sir.

Q. You say you smelt the toluol in No. 5 before you went to Doctor Schaefer's Works?

A. Yes, sir.

Q. You did go to Doctor Schaefer's Works and saw the process of manufacture?

A. I went to Doctor Schaefer's Works and the process was detailed to me. I never saw it in operation.

Q. They were using white California wine at the time you went there?

A. They did not say whether it was white or red California wine.

Q. You didn't see it?

A. No, sir.

Q. And he didn't tell you?

A. No, sir.

Q. Could you tell by the color of the mixture whether they were using white or red wine?

A. I did not see the process.

Q. Did you see any of the manufactured product?

A. No, sir; not in Doctor Schaefer's factory. They were not running at the time.

Q. About the rabbit experiments, did you ever personally conduct any experiments with rabbits, and in which they had tubes put down their throat?

A. Yes, sir.

Q. Did you ever yourself put tubes down?

A. Many a time.

Q. Did you ever kill any of them in the process?

A. No, sir; I have never been unfortunate enough.

Q. Did you ever have them bite the tube off before you could get it down their throat?

A. No, sir.

Q. How did you keep them from doing that?

A. It is a simple mechanism that we use.

Q. What is it?

A. A piece of wood is put in between the rabbit's teeth the wood having a hole through which the tube is inserted into the mouth and down the rabbit's gullet.

Q. You take a piece of wood how large?

A. About the size of your finger.

Q. Put the tube through that block of wood?

A. Yes, sir.

Q. You say he really seems to enjoy that process?

A. I never saw them express any dissatisfaction.

Q. You say the effect of 1/400 of a grain of cocaine would not be appreciable?

A. I hardly think it would be appreciable so far as we can determine by present methods.

Q. That is what I mean, appreciable means, what we can determine by present methods?

A. Yes, sir.

Q. Do you say the effects of caffeine and cocaine are identical?

A. I said they are similar in many respects.

Q. How much would the effect of 1/400 of a grain of cocaine affect the effect of 1.21 grains of caffeine?

A. Cocaine is about ten times as powerful as caffeine.

Q. How is that?

A. Cocaine is about ten times as powerful as caffeine, and in that proportion it would increase the action of the caffeine.

Q. How do you know that?

A. From experience.

Q. What experience — how have you contrasted the effect of caffeine and cocaine?

A. By general observation, for example, you give a rabbit a dose of caffeine — the dose must be very much larger when you give him the dose of cocaine, and furthermore, the dose of cocaine is always less than that of caffeine.

Q. If you should give him 1/10 as much cocaine as you give caffeine, the effect would be the same?

A. Oh, no, they are similar but not the same.

Q. They would be strikingly different?

A. I don't think so.

Q. A man might take four or five grains of caffeine might he not, people sometimes do?

A. I don't get that question.

Q. They sometimes take four or five grains of caffeine?

A. Yes, sir.

Q. What would be the effect be if you would give him 1/10 that amount of cocaine?

A. I think the effect would be similar in many respects but not identical. My observation has been that it would be similar in connection with the work I have conducted on the drug.

Q. How much cocaine can you give a person without killing him?

A. That depends. I have seen people take 25 grains.

Q. That is when they get tolerant to it and get the cocaine habit?

A. You didn't limit your question.

Q. Take a man not accustomed to the use of cocaine, how much can you give him without killing him?

A. There is nothing on record to show definitely how much people can take, how much it will take to kill a man.

Q. So you cannot tell?

A. It is sometimes stated that such and such a quantity may produce death, but nothing definite is on record.

(Witness excused.)

(Thereupon at 12 o'clock noon, Court adjourned until 12:20 the same day.)

AFTER RECESS:

The Court met pursuant to recess at 12:20 o'clock p. m.

GOVERNMENT'S EVIDENCE IN REBUTTAL, CONTINUED:

L. F. KEBLER,

resumed the stand for further

CROSS EXAMINATION,
BY MR. SIZER:

Q. Doctor, I believe you say you consider cocaine has about ten times the strength of caffeine, or is about ten times as strong as caffeine, therefore 1/400 of a grain of cocaine would be equivalent to 1/40 of a grain of caffeine?

A. That is possible.

Q. Now, if you have an ounce of syrup containing 1.21 grains of caffeine and after that 1/40 of a grain of caffeine which would make 1.225 of a grain, do you think there would be any appreciable difference in the latter mixture, that the latter mixture would be appreciably stronger than the former?

A. Well, state that again.

Q. Just read him the question?

(Whereupon the question was read to him as follows: "Q. Now, if you have an ounce of syrup containing 1.21 grains of caffeine and after that 1/40 of a grain of caffeine which would make 1.225 of a grain, do you think there would be any appreciable difference in the latter mixture, that the latter mixture would be appreciably stronger than the former?")

A. Well, it would be in proportion to the amount of caffeine added. My answer was, or intended to be, that the caffeine would simply augment the action in the amount present.

Q. But my question was whether the effects of an ounce of syrup containing 1.225 of a grain of caffeine would be appreciably different from the effects of an ounce of syrup containing 1.21 of a grain of caffeine. In other words, would the addition of 1/40 of a grain of caffeine to an ounce of syrup make any appreciable difference?

A. It might not be appreciable — and yet cocaine has a marked action in 1/40 of a grain.

Q. Now, Doctor, referring to a five-ounce cup of coffee, that contains about 40 teaspoonfuls?

A. A five-ounce cup of coffee?

Q. Yes, or a five-ounce cup of any fluid.

A. Yes.

Q. Now, if that cup of coffee contained one grain of caffeine, there would be about 1/40 of a grain in each teaspoonful?

A. Yes, sir.

Q. Then, suppose you take the cup of coffee containing forty teaspoonfuls and then take another teaspoonful, do you think that the additional teaspoonful would create any appreciable effect?

A. I think I have answered that question.

The Court: I think that is a matter for argument.

Mr. Sizer: All right.

REDIRECT EXAMINATION,

BY MR. MILLER:

Q. Doctor, can from your experience, observation and working with tannin, approximately what is the proportion of tannin in coca or what is known here indiscriminately as coca or coca leaf, the form in which it has been used.

A. The form in which it is used I would consider it contained in the neighborhood of 1/4 of a per cent.

RECROSS-EXAMINATION,
BY MR. SIZER:

Q. Did you testify that you never had undertaken to determine tannin in the coca leaf?

A. Yes, sir.

Q. So you have not undertaken to do that, have you?

A. No, sir, I didn't say I did.

Q. You stated you had not?

A. Yes, sir.

Q. That you had never undertaken to determine it?

A. Yes, sir.

(Witness excused.)

Mr. Miller: I wish before calling anybody to the stand to submit I have some witnesses with respect to the consumption of Coca-Cola by children, and your Honor will recollect that that matter was up the other day. I have the testimony here on that point, and I have no desire to read it but just merely desire to pass it to your Honor.

The Court: The question of the effect of my former ruling — whether I allowed you to go into that question.

Mr. Sizer: How was that?

The Court: Whether I allowed Mr. Miller to go into that question or excluded him from the introduction of witnesses to show it was drunk by children, I will allow you to go into that if I precluded you.

Mr. Sizer: Here is what your Honor said at page 1095:

"The Court: You are trying to prove the general fact that Coca-Cola is sold without restriction to adults and children. That has been proven repeatedly. If you want to show to what extent children drink it, differing from that general custom, you may go into that."

And thereupon Mr. Miller proceeded to go into that.

Mr. Miller: I do not wish to argue the matter. I want to give your Honor exactly what occurred in three or four questions and then offer these other witnesses, and here it is:

"Q. State whether or not you observed as to the consumption by children.

A. I have noticed children taking it."

And the Court said:

"There is no dispute about that, Mr. Miller."

And I said, "There was a great effort to dispute that in the testimony originally," and the Court said "Until it is disputed, you need not go into that"; and I said "Is there any dispute about children taking Coca-Cola?"; and the Court said "Yes, if there is no dispute, you need not go

further into that"; and Mr. Sizer said "We say they can get it if they want it, but as a general rule they do not care for it"; and I said to that "I am trying to show that they do take it and care for it by this witness"; and then the Court stated "You are trying to prove the general fact that Coca-Cola is sold without restriction to adults and children. That has been proven repeatedly. If you want to show to what extent children drink it, different from that general custom, you may go into that".

That is the way we have it here. I am not trying to insist for a moment that I misunderstood anything, I am trying to put an entirely different construction on that language from what Mr. Sizer does, and I submit it to your Honor what was meant when you said "If you desire to show to what extent they drink it, different from the general custom" that I could go into it.

The Court: Didn't you proceed to ask questions about it?

Mr. Miller: Yes, and with respect to the consumption by children this witness said he did not know about it.

The Court: Well, I did not rule it out. I will let you go right ahead.

Mr. Miller: Yes, but I submit whether or not in that connection I had a right to assume you would know permitted to go ahead with this witness, in view of that announcement by your Honor, I had a right to assume that no more testimony on that point should be introduced unless I could differentiate the consumption of it by children from indiscriminate consumption. But I submit, whether I am right or wrong about it, adversary counsel, to meet that proposition as I understood it, proved that children did not consume it because they did not like it. Now, that has been the reason offered here repeatedly, and I think the record will bear me out, and I submit it would be a physical impossibility and monstrosity to call children as to whether they like it or not. The only way we can disprove it, that they do not like it, which comes from the defense, is to call dispensers to show that they are acquainted with it, and with that, I have nothing further to say.

The Court: The reasons for their taking it or their not taking it — it seems to me are immaterial. It seems to me that I have a very distinct impression and have had all the time that my ruling was just as I now stated. I am compelled to construe that as meaning that you need not prove by any witness the fact that Coca-Cola was on sale indiscriminately to all persons, including children. That fact was not in dispute, but the purpose was to show the extent to which children drank it, and you were permitted in chief to go into that, and I did not intend to exclude it, and I

don't think that I did, and I think it is indicated that I did not exclude it by the fact that you after put a witness on the stand to prove it, and I never stopped you as I recall it on that point. I certainly did not intend to.

Mr. Miller: Well, all we wish to do is to show that we had these dispensers in attendance and offered to call them.

The Court: You may show that.

Mr. Miller: In that same connection, I desire to offer a list of the American toxicologists as an exhibit to Doctor Kebler's testimony dealing with that subject which your Honor said we could not go into this morning.

The Court: I will say that if this motion had come up earlier in the case, I should probably have allowed you to introduce that in evidence, even if it is in chief, but I think it is unfair at the close of the trial when the claimant will evidently have no opportunity to look into the witnesses who come here — it would be impossible for them to do so, and I don't think that proof ought to be allowed in the case, which is in chief, when the case is about ready to close and when it might prejudice the claimant by not having that opportunity ——

Mr. Miller: All three witnesses reside in Chattanooga.

Mr. Sizer: I would like to see the papers they propose to offer.

The Court: It is a list or what?

Mr. Miller: Of toxicologists and what they say, the American and English text books on the subject.

Mr. Sizer: I don't understand your Honor admits all these books.

The Court: He wants to show that he offered them and to show it in the record, that he made the offer and that they were ruled out.

Mr. Miller: Yes.

(The list offered and excluded by the Court was in the words and figures following):

"In this connection show by Dr. Kebler that Blythe (Poisons, Their effects and Detection, 1906 Ed., pp. 40-1) treats of caffeine under the heading 'Toxic Action and Chemical Composition.'

And on page 56 of the same work appears the title 'The spectroscope as an Aid to the Identification of Certain Poisons', which is followed (on page 58) by a group of poisonous substances which are enumerated, including caffeine.

BRUNDAGE (Manual of Toxicology, Ed. 1910, pp. 108-9) deals with caffeine as a poisonous substance, giving (a) symptoms of caffeine poisoning and (b) the treatment

therefor, including stomach pump, emetic, and divers other applications to minimize the effects of caffeine poisoning.

DR. V. C. VAUGHAN, a witness of libelee, in a work by Vaughan and Novy, on Cellular Toxins (4th edition, 1902) page 345, treats of caffeine and describes its effects on the human system.

WITTHAUS AND BECK, in their treatise on Medical Jurisprudence (Forensic) and Toxicology (1896 Edition) Dr. Witthaus having been called as a witness for the libelee — in vol. 4, page 56, under the statistics of poisoning cases, includes caffeine with divers other poisons.

PETERSEN AND HAINES — the latter of whom was called as a witness for libellees, in their Text-book of Legal Medicine and Toxicology (Vol. 2, Ed. 1904, page 300-1) in giving the definition of a poison as respects quantity, include caffeine.

1/400 of a grain of cocaine would produce an appreciable effect and would materially intensify the effect of 1-1/5 grains of caffeine in a glass of carbonated water.

In this connection show the Pharmacopoeial dose of cocaine, in response to a point made by adversary counsel at pages 1868-1870.

Dr. Kebler, on page 429, was asked as to two trade-marks of the Coca-Cola Company, and on page 430 the Court stated 'They can be identified as Nos. 2 and 3 to the testimony of this witness.'

They have not been filed, yet."

The Court: Let me see the examination of that witness on the question as to the children ——

Mr. Hirsch: All right.

Mr. Miller: We will ask Doctor Boos to take the stand.

DR. WILLIAM F. BOOS,
recalled for further examination, testified as follows:

REDIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Boos, I will get you to state whether or not you have had occasion to conduct animal experiments and the administration of drugs such as solution of caffeine or aqueous solutions of caffeine, as testified to by the witnesses for the government in this case, and especially as to whether or not the introduction of a tube in the administration of such drugs in the case of a rabbit is harmful?

A. I have had occasion to use a tube on rabbits very frequently, perhaps on some 200 animals or more, and it is a very usual method, in fact the only method by which

we can actually with any substance into the stomach of the animal.

Q. Why is that so, why do you say it is the only method by which you can accurately do it?

A. It is the only way to use it in order to be absolutely certain that the entire amount of the substance reaches the stomach, if you give it into the stomach.

Q. Is it or not necessary and usual that the animal be fed his food in the aqueous solution of caffeine or drug, or does it take that in a different way?

A. No, the animal continues — if you are giving the substance which you are experimenting through a tube, you do not have to vary the exact process of alimentation, that is of the food going on in the animal's body, the change, the exact changes which take place in the food in the body, why you can allow the animal to continue to eat its food in the usual way, the introduction of food for the purpose of determining other substances does not have anything to do with the animal's nutrition in any way.

Q. I will get you to state whether or not you have either been present at autopsies where animals had been fed drugs or administered drugs through a rubber tube, such as the witness Morgan did, and if any effects of the insertion of the tube were found at such autopsies?

A. Yes, I have on a great many autopsies myself and have been present at a great many others. I have seen a great many, but in no instances can I remember any effects of the tube on the esophagus. It is quite inconceivable.

Q. Whether that tube that was permitted ——

Mr. Hirsch: It has been exhibited here.

The Witness: We use a small catheter.

Mr. Sizer: I object to that.

The Court: Well, he wants to show what the usual method was.

Mr. Sizer: That is irrelevant.

The Court: I think it would be more to the advantage of the claimant if they want to show that something different was used.

Mr. Miller: I was trying to show the character of the tube that was usually used, and whether or not it was similar to one Doctor Morgan exhibited here.

The Court: Well, you may ask that question.

BY MR. MILLER:

Q. Did you see the tube that was here exhibited?

A. Yes, sir, only at a distance, I didn't examine it close enough. I was talking about the tube I used.

Q. What is the one that is customarily used?

A. We use a soft rubber catheter.

Q. A soft rubber catheter?

A. A catheter.

Q. Well, just describe it as compared with this one that Doctor Morgan had.

The Court: Have you got that one here?

Mr. Miller: I think it was put in evidence.

The Witness: I think it is possibly the same thing, I did not examine it closely.

Mr. Miller: If we can find it, we would like to have it very much. I don't know whether it was actually introduced in evidence or not. There have been so many things done that should not have been, and so many things left undone which should have been done.

The Court: You may proceed.

Mr. Sizer: It was offered in evidence. It may not have been filed with the stenographer, I think it was handed around to the jury.

Mr. Miller: Yes, that is true.

The Court: It may be filed with the stenographer as part of the evidence.

BY MR. MILLER:

Q. I will ask you from the examination of the tube that you have made from a distance as you say you have observed it, compared with the tube that is usually and customarily used in such cases.

A. As far as I could tell from the distance, it was about the same thing as I have used myself in a great many cases.

Q. Were you sitting, how close were you to it?

A. About where Mr. Fuller is sitting now.

Q. That is at this table?

A. Yes, sir.

Q. When the tube was being passed around to the jury?

A. Yes, sir. One point is it might have been a small stomach tube, such as those that are used so frequently on human beings to wash out the stomach, it might have been a catheter, but there is a very slight difference anyway in which the instrument is made, but it is immaterial; the consistency is the same, it is made of soft rubber and pliable so it adjusts itself to the passage.

Q. Would there be any difference in the matter of injury on the inside as to which was inserted?

A. No, sir.

Q. Would it cause any injury?

A. No, sir; of course it has to be properly inserted.

Q. Now, if any injuries resulted from the insertion of that tube, such a one as Doctor Morgan exhibited here, where would that injurious result have been manifested,

what proportion of the anatomy would it have injured?

A. The only trouble that ever follows as far as I have ever known in the insertion of a soft rubber tube into the rabbit's mouth is putting the tube into the windpipe instead of into the esophagus, and that is committing a serious error in technique and no man with any skill whatever ought to have such a thing as that happen to him. The same is true of biting off the end of the tube.

Q. Now, in the case of the autopsies that were held by Doctor Formad and Gallagher, state whether or not the injurious applications that they described could have in any wise in your opinion have been ascribed to the insertion of the tube and the effect of solutions through the tube.

A. No, sir; such an instance would be absolutely ridiculous to my mind.

Q. State why.

A. Because ——

Mr. Sizer: I don't think that is a matter in rebuttal. This witness was examined about that in chief.

The Court: I think that is in rebuttal — you attacked those experiments on the ground that they were conducted through a tube. I think it is proper now for the Government to rebut that.

BY MR. MILLER:

Q. State why, Doctor.

A. Because in the first place, Doctors Formad and Gallagher, as I remember, did not find any sign of local injury caused by the tube. And if the tube had been in any way responsible for the trouble in the animal, it would have caused a local injury at some point, and even if a local injury had been caused, it would not have led to hyperemia of the brain and other organs.

Mr. Sizer: I move to exclude so much of the answer of the witness as to what these Doctors testified as to any injury to the windpipe, trachea or esophagus, because their testimony is before the jury and shows for itself what they said.

The Court: I don't think it the proper way to get that in. The objection is sustained. If you want to get the opinion of this witness as to matters that he did not see, you can put it in the form of a hypothetical question.

BY MR. MILLER:

Q. I will ask you to what portion of the anatomy the injury, if any, that would result from the insertion of a tube, would be confined?

A. Why, it would be confined to the esophagus.
Q. Then tell us what the esophagus is.
A. The gullet.
Q. And show us where that is.
A. That part through which the food goes into the stomach.
Q. That means a part of your neck up here?
A. Yes, sir, in front.

BY MR. MILLER:

Q. State if you heard or have read the testimony of Dr. Wesener as to experiments with fifteen grains of caffeine per day and of recovering none of the caffeine from the urine.
A. Pardon me. I think he said for two days he gave them thirteen grains, not fifteen; on one day thirteen grains and on another thirteen and six-tenths.
Q. Well, assuming that thirteen grains were administered in succession and none was recovered in the urine; what would that prove as to the value of the experiment?
A. I would say if after giving a person thirteen grains of caffeine on two successive days Dr. Wesener was not able to recover caffeine from the urine, that was not the fault of the caffeine but the fault of Dr. Wesener's technique, that the caffeine was there beyond a doubt to my mind.
Q. I will ask you to state whether or not caffeine has or not frequently been found in the urine.
A. It is stated in all of the works upon the subject ——
Mr. Sizer: I object to that.
The Court: The objection is sustained.

BY MR. MILLER:

Q. Speaking from the literature, state whether or not caffeine when taken in such quantities is excreted and found in the urine.
Mr. Sizer: I object to that. He cannot make that competent by testifying from the literature.
The Court: The objection is sustained.

BY MR. MILLER:

Q. I ask you on what you base your opinion that this failure to find caffeine in the urine was due to the technique adopted by Dr. Wesener.
A. Because it is common knowledge of scientists who have had any study of the subject of pharmacology that caffeine is excreted in the urine under ordinary conditions.
Mr. Sizer: I want to object to this testimony again be-

cause it is simply a rehash and a restatement of what the witness undertook to testify on his original examination in chief.

A. I did not testify on that subject at all.

Mr. Sizer: We have it here.

Mr. Miller: I am asking about Dr. Wesener's experiments.

Mr. Sizer: But he is answering as to caffeine in the urine.

The Court: I do not think that this re-examination comes within the limits that should be observed in a re-examination with reference to results. I do not believe that either side should go into a general criticism of this sort of the experiments of the other side, but if they can point out in the methods used, anything to show that there was a defect in the result, they can do so. Now, if your side, if Dr. Boos can point out anything in Dr. Wesener's methods that would lead to inaccurate results, that is competent.

BY MR. MILLER:

Q. Borrowing the phraseology of your Honor, — I will ask you to state, Dr. Boos, if there was anything about the administration or carrying on of Dr. Wesener's methods that in your opinion rendered incompetent and inaccurate, the test, and if so, to tell what it was.

A. Not having done this work recently I would not say that the method as described by Dr. Wesener was not a good one, but I would like to explain this: Because a man describes a certain method does not say that the man carried the method out carefully.

Mr. Sizer: I move to strike out all the testimony of this witness with respect to Dr. Wesener's experiments.

The Court: The motion is sustained.

Mr. Miller: But to part of it there was no exception at the time it was given.

Mr. Sizer: I make the objection now because he admits that he cannot criticise Dr. Wesener.

The Court: The witness does not say that exactly, but I exclude the testimony. I intended from the start to limit both sides in this matter to criticism of the methods employed by others. The jury must determine as to the care and accuracy of the results.

Mr. Miller: Note an exception.

The Court: Let it be noted.

BY MR. MILLER:

Q. Now, for caffeine to reach the brain, I will ask you to state whether or not it is necessary for it to reach the

muscle directly as such.

Mr. Sizer: That was all gone into.

The Court: I have ruled that out and I do not see the bearing. But if it has any bearing, it is not a matter in chief.

Mr. Miller: I offer this in response to Dr. Schmiedeberg's deposition read this morning and which stated this morning that it was a stimulant to the muscle.

The Court: Of the will, he said.

Mr. Miller: As he said, it permitted the will to act more directly on the muscle. My point is before it can reach the muscle, it must pass through the brain, and I think that is directly in rebuttal of what Dr. Schmiedeberg said. I am not responsible for the getting of that deposition in.

The Court: I will allow you for that purpose to examine this witness on that point.

(Question read to the witness.)

A. In order that caffeine may reach the brain it must at the same time reach the muscle in the circulation of the blood.

BY MR. MILLER:

Q. Why so?

A. Because the circulation carries it to all parts of the body and it is impossible for the circulation to carry caffeine to the brain and not at the same time to carry it to the muscles.

Mr. Sizer: I submit that is not in rebuttal of anything Dr. Schmiedeberg said and that is something that has been gone into before and threshed out by various witnesses testifying to their theories as to how much it reaches the muscles, and so forth.

The Court: I will allow it to be asked in view of the last deposition; otherwise I would not.

A. Your Honor has ruled that the experiments ——

Mr. Sizer: I object to that.

The Court: If the witness wants to make an explanation, the Court will allow it.

A. The experiment showing the action of caffeine directly applied to the muscle is always used to demonstrate that action and for no other purpose.

The Court: I do not think that is an explanation and I exclude it; that bears on the ruling of the Court and I exclude it.

The Witness: I simply wanted to show that it is not designed to show ——

The Court: That is excluded ——

The Witness: It is simply a convenient method of showing this action.

The Court: That matter is excluded. The answer to the question is not excluded, but the explanation is.

BY MR. MILLER:

Q. To what is the reflex irritability attributable? Is that a caffeine action or a monomethyl action, or what?

A. There is always a certain degree of reflex irritability present. The increase of reflex irritability is attributed to the caffeine. The other drugs are dimethylxanthine and monomethylxanthine, and they may produce it to a slight degree, but only to a slight degree.

Mr. Sizer: I do not see what that is in rebuttal of.

Mr. Miller: Dr. Schmiedeberg and some of the other witnesses said there was a decided increase of reflex irritability.

Mr. Sizer: Well, that does not rebut that proposition.

BY MR. MILLER:

Q. State whether or not you have read what is known as the Zenetz and the Allard and the Lemaire cases, which are reported as death due to caffeine poisoning or cases due to caffeine intoxication, and if you state you have from the original text, then I desire to interrogate you on that point.

Mr. Sizer: We object to that. I think this witness is the one who originally introduced the Zenetz and the Allard cases into the record, or at least they were introduced by some of the witnesses on behalf of the Government; I am quite sure Dr. Boos testified about that.

The Court: I do not recalled exactly as to that. I think they were not introduced by Dr. Boos, but if he has testified to that in chief, I exclude it. He would be a striking exception to the scientific witnesses who have testified if he did not refer to it. Did you testify as to those, Doctor?

The Witness: I did not mention either case, — one single word.

The Court: You may proceed.

BY MR. MILLER:

Q. I will ask you to state if you have read the Zenetz, the Allard and the Lemaire cases.

A. I have read the Zenetz cases. It is pronounced T-s-t-n-e-t-z. And the Allard cases and some of the Lemaire cases.

Q. As respects the Zenetz cases, I will ask you whether or not, taking into consideration the symptoms as there given and reported, the cases were cases of death due to caffeine.

A. To my mind there is no doubt as to that.

Mr. Sizer: I object to his testifying what is in his mind.

The Court: I think the better method is the reverse of that as used by the counsel for the Claimant. They asked them what in those cases indicated that they were not cases of caffeine poisoning. You ask now, what in the report indicates that they were, so that the witnesses may point it out.

BY MR. MILLER:

Q. I will ask you what there is in the report of the Zenetz case, to start with, that convinces you or causes you to believe that they were due to caffeine poisoning.

A. All three cases died suddenly and in all three cases the autopsies after death showed a very peculiar contraction of the heart, a very spasmodic contraction of the heart, so that in one of the cases, the second one, the heart was so tightly contracted as to obliterate the changes of the heart. That is a characteristic condition that is never seen in any other kind of poisoning.

Q. I will ask you to state from your experience and knowledge and from your reading of the literature, whether or not any person has ever conducted experiments with caffeine on human beings, and if so, who it was.

A. The only series of systematic experiments that have been conducted on human beings to determine the action of caffeine, were those conducted by this man Zenetz.

Mr. Sizer: I object to his testifying to experiments conducted by Zenetz. I do not understand that that is with reference to these reported cases.

The Court: The exception is sustained.

Mr. Miller: Our point is — I do not wish to argue with the Court after it has ruled — but Dr. Vaughan stated that animal experimentation should be taken only as a partial indication of what this drug would do on man because no human experimentation had ever been conducted. I am trying to show that one author did conduct experiments on human beings in response to that particular portion of Dr. Vaughan's testimony.

The Court: That is entirely collateral; it has another prejudicial effect that might overcome that effect. If that were the only effect I might admit it, but it has another tendency.

BY MR. MILLER:

Q. Now, then, what is there about the administration of caffeine that causes this spastic contraction of the heart which Zenetz describes?

A. It is the tendency of caffeine to produce the spastic contraction of muscles and the heart simply being one of the muscles of the body, it is exposed to the same possibil-

ity of spastic contraction which we see in the muscles of any caffeine poisoning.

The Court: If you want to prove that there has been one set of experiments with caffeine on human beings, you can do it.

BY MR. MILLER:

Q. I ask you whether or not there has been a set of experiments, speaking from your personal knowledge and reading of standard literature, on humanity for the purpose of determining the effects of caffeine on humanity, and if you say yes, through what period of time. That must be limited to experiments reported in some scientific journal. Unless your statement is based on statements reported in scientific literature, don't give them, but if it is, give it.

Mr. Sizer: We object to that; that would be bringing in reported cases as original evidence.

The Court: I am not letting in what it was, but I let it in just simply for the purpose of bearing on another witness' testimony, to contradict the other statements.

Mr. Sizer: I think Mr. Miller is laboring under a misapprehension. Doctor Vaughan did not testify that no experiments had ever been conducted on human beings. As a matter of fact, some of our witnesses did make such experiments.

The Court: I do not recall that statement, but if it was made I will allow this.

Mr. Sizer: We will admit at bar that experiments have been conducted on human beings. I refer to Dr. Wilcox' experiment on himself.

Mr. Miller: I am speaking of cases reported in the literature.

Mr. Sizer: I admit that Dr. Wilcox testified to having made one experiment and I do not object to Dr. Boos' testifying that there are reports in literature of experiments on human beings as to the use of caffeine.

The Court: That is all that is admitted.

Mr. Sizer: Then I withdraw any objection to that.

BY MR. MILLER:

Q. Do you know of any other author than Doctor Zenetz that had conducted ——

The Court: I have excluded the fact that Dr. Zenetz had conducted — counsel misunderstood me. I simply permit him to ask the question of the witness whether he knows, without naming the men who conducted the experiments, that any experiments as to the use of caffeine on

human beings have been reported in scientific works.

BY MR. MILLER:

Q. I will ask you whether or not you know of any experiments with caffeine that have been conducted on human beings that have been reported in scientific works.

A. I do.

Q. Now, state whether or not in the reported cases like those Zenetz and Allard and Lemaire cases, if there had been any unusual symptoms or contra-indications, that is as respects the effect of caffeine on the heart, and that death was due to caffeine poisoning, if in the usual and ordinary courses of reporting, that would have been chronicled.

Mr. Sizer: That is a matter of inference. Dr. Boos can not tell what Dr. Zenetz might or might not have done.

The Court: He can testify as to the general custom among scientific men in reporting cases of that character, if there be such a custom. I think that has been proven several times and never denied.

Mr. Miller: On the contrary, here is a sample of what he claims the witnesses have testified ——

The Court: Did any of the witnesses say it was not a custom for scientific men to report their cases?

Mr. Miller: (Reading) "The article is somewhat loosely written and may be interpreted in several ways." Another witness says: "The author simply claims it is dangerous to use medicinal doses or large doses or caffeine."

The Court: Until someone disputes the general custom, I do not think it is competent and you need not have any evidence to the contrary.

Mr. Miller: Assuming that proven, I will go on.

The Court: There are witnesses to that point and I recall none to the contrary.

BY MR. MILLER:

Q. Now, from the report of the Zenetz and Lemaire cases, I will ask you whether or not as a scientific man in your opinion they are loosely written or whether there is omission or insertion of anything that to your mind tends to confuse or make ambiguous the report as there shown.

A. I think not. It is perfectly clear to my mind.

Q. Can you tell by looking at morphine and caffeine crystals taken from the original containers, as they are prepared, any difference by sight?

A. No, sir.

Mr. Sizer: I do not understand, your Honor, that Doctor Boos is qualified as an expert on drugs. If he wants to

do so, all right.

The Court: What has been your experience along that line?

The Witness: That is my business; I have to use a great many drugs in my work and I am very familiar with the appearance of drugs, but it would be absolutely impossible for me to distinguish caffeine from a number of other drugs that look very much like it.

The Court: Has your experience been such as to qualify you to express an opinion on that?

The Witness: Oh, yes.

The Court: He may state.

Mr. Miller: That is all I want to show on that line.

BY MR. MILLER:

Q. Did you hear the testimony of this Professor Hollingworth, the psychologist who was introduced?

A. I did.

Q. I will ask you to state what if any inferences you were able to draw from the experiments as reported by Dr. Hollingworth, or conclusions, rather, instead of inferences, assuming his statements to be true as to the effects of caffeine on the human system.

A. Assuming that his experiments have value and that his conclusions are correct, the experiments would show that caffeine has a great tendency to disturb and render less efficient all those actions which are dependent upon co-ordination.

Q. And by "co-ordination" you mean connection ——

A. The acting together of a number of impulses to produce a certain action.

Q. What was there about those experiments that caused you to arrive at that conclusion?

A. Because in the experiments which had to do with placing the peg in the hole, it was found that caffeine made the person doing the experimenting much less steady; that in trying to put the peg into the hole he would sort of lunge forward, he would be too ready to do it, in a way, and that he had to overcome this readiness or over-stimulation, in order to place it in the hole properly, and the very fact that he had to overcome that, destroys the value of that experiment.

Q. Now, in conducting experiments of that kind, state whether or not it is necessary in order to conduct them according to scientific methods, to have controls along with the other specimens or subjects.

A. Mr. Miller, you assume in your question that you can conduct scientific experiments along that line and that

is an utter impossibility.

Q. Why so?

A. Because all those experiments under the head of experimental psychology are not true scientific experiments. There is no such thing as experimental psychology. It does not exist.

Q. Why do you say there is no such thing as experimental psychology — what is your foundation for that?

A. Psychology is a speculative study. It is a branch of philosophy; as such, it is entirely speculative. On the other hand, we have the exact science of physiology. You cannot mingle speculative methods of salts and exact methods of salts. You have either psychology on the one hand or physiology on the other — but experimental psychology would mean psychology carried along exact experimental line, and that is not possible. You cannot exclude the speculative side.

Q. What do you mean by the speculative side?

A. The influence of the will and the influence of consciousness, and all those things which are bound to have an effect upon the action of the individual, and as to the value of those we simply have to use our speculation. We have to try to find out to what extent these things influence the experiment and that destroys their value from a scientific point of view.

Q. Assuming they could be conducted, would it be necessary to have control subjects?

A. It would be necessary to control the subject in each case by a long series of experiments with carefully known food and carefully known quantities of food to determine whether that individual's metabolism was at one and the same ebb all through the experiment. Only then could you possibly compare his performance with some performance under the influence of caffeine.

Q. Now, taking Professor Hollingworth's tests as he gave them, and considering that his subjects were out of his sight during certain hours, I believe they reported to him periodically, state whether or not they are such as to enable a scientific man to form a scientific conclusion.

A. I think they are, in part, but they are not of any value at all as scientific experiments.

Q. From his report, as made by Professor Hollingworth, was there any beneficial result shown physiologically or otherwise, so far as you could observe, in the cases of the subjects?

A. It all depends on what you call beneficial results. To my mind there was not.

The Court: That is not a matter of expert opinion, but

is a matter for the jury.

BY MR. MILLER:

Q. Is there any reason why children cannot take caffeine as well as persons of more mature years, and if so, why?

Mr. Sizer: That question was gone over by a number of witnesses in chief.

The Court: It is a matter in chief.

Mr. Miller: That is in response to the statement of Doctor Moyer, who is the only man who made a statement that there would be no difference between children and older persons.

The Court: That was denying a statement of your witnesses and now you cannot come back and prove your statement over again. That is a matter of which you had the burden.

Mr. Miller: Very well, if your Honor so holds.

BY MR. MILLER:

Q. I will ask you if you are acquainted personally with Dr. Schmiedeberg, whose deposition was read this forenoon.

A. Very well acquainted with him.

Q. How long have you been acquainted with him?

A. I worked under him for four years.

Q. State whether or not he is a physician or clinician; whether he practices medicine.

A. He has not the remotest idea of the practice of medicine.

Q. Is he a physician?

A. He has never practiced one day in his life. He is a physician because he has a degree of M.D., but he is not a practicing physician and never has practiced.

Q. What do you mean by a clinician?

A. I mean a practitioner.

Q. I will ask you whether or not you are familiar with the signature of Dr. Schmiedeberg?

A. I am very familiar with it.

Q. I will ask you whether or not on last week you saw in possession of counsel on the other side a signature of Doctor Schmiedeberg to what purported to be an opinion written to Harold Hirsch, respecting the product known as Coca-Cola.

Mr. Sizer: I object.

The Court: I do not see the bearing.

Mr. Miller: Because Dr. Schmiedeberg had stated that he had never written anything on that subject except that deposition.

Mr. Hirsch: He said he never had written any treatises or articles.

Mr. Miller: He said none except this deposition.

The Court: I think he said none but this opinion. Of course, I knew of the other opinion at the time, and I suppose that the witness had that in mind when he referred to that.

Mr. Sizer: Your Honor will notice that the deposition was practically the same as the opinion, and I take it he didn't know the difference.

Mr. Miller: If you have a witness that ignorant that he does not know the difference between an opinion and a deposition—

The Court: Let me see the deposition.

Mr. Miller: I do not understand your Honor's ruling.

The Court: I have not ruled yet.

Mr. Sizer: The question asked was about articles or treatises.

The Court: I cannot tell until I find the deposition. (After examining deposition.) It is true that he literally states, "Outside of this opinion," apparently referring to the deposition, "the opinion expressed here in this deposition," that he has written about Coca-Cola, but it is apparent to me that it has to be considered with reference to the question which was asked, which was if he had any occasion to write any articles or treatises dealing with caffeine. I do not think that question is material. I do not think that that calls for any mention of his having written a letter.

BY MR. MILLER:

Q. I will ask you whether or not you saw in the possession of adverse counsel last week—

The Court: I hold that is immaterial. The obvious purpose of the witness in answering was that he had not written any article or treatise for publication, and the whole matter is so thoroughly collateral and unimportant that I shall not allow it.

Mr. Miller: One reason for asking this was because I had no opportunity to cross-examine Doctor Schmiedeberg except by interrogatories.

The Court: If you want to call for the other matter for the purpose of showing contradictory statements, that is another thing.

Mr. Hirsch: Doctor Boos has had that other opinion and has had it for a week.

Mr. Miller: In view of the fact that the deposition has gone in, I have no objection to the opinion going in.

Mr. Hirsch: We have not.

Mr. Sizer: We will let it go in, then.

The Court: Where is it?

Mr. McConville: I asked counsel for it last night and I couldn't find it.

Mr. Sizer: We will put it in.

Mr. Miller: There are two of them, and one shows the date and the other does not, and we want the one with the date.

Mr. Sizer: It was about the 10th of last November.

The Court: The Court would otherwise exclude it, but by agreement of counsel the written opinion of Doctor Schmiedeberg, the original German letter, is to be introduced in evidence,—signed by Dr. Schmiedeberg, accompanied by a translation agreed upon by the parties.

Mr. Sizer: And it was offered by Mr. Miller.

Mr. Miller: I did not offer it, but I have no objection to it. I do not put it in as my evidence. I do not agree that it is true. I would like to have the deposition a moment.

The Court: How is this to go in? That should be clearly defined.

Mr. Miller: I want it to go in as an exhibit with the deposition of the witness.

The Court: For what purpose?

Mr. Miller: To show that Dr. Schmiedeberg on the 10th of last November wrote an opinion in response to a request of Mr. Harold Hirsch, and therefore it controverts his deposition when he says—

The Court: I hold that is immaterial. If it does not go in as an exhibit with the evidence I will exclude it.

Mr. Miller: Then I call your Honor's attention to the fact that the only person who communicated with him was Dr. Louis Schaefer.

The Court: Let me see the deposition. I know he said he was written by Dr. Schaefer, but I do not recall that he said that was the only person. The answer is:

> "Q. When and under what circumstances were you advised that your deposition was desired, and by whom?
>
> "A. By a friend of mine, Dr. Louis Schaefer, President of the Schaefer Alkaloid Works, Maywood, New Jersey."

That does not say that he was not written by any other person; he said he didn't know of any person that was connected with the Coca-Cola Company, and that is probably what you have in mind.

Mr. Miller: I read the deposition for the first time hastily last night and I might misquote it, but, at any rate,

whether ruled out or not, I would like to borrow one of those depositions long enough to interrogate the witness with respect to certain statements contained in it.

The Court: Then it is understood that that letter is not to go in?

Mr. Miller: That is what I understand. I do not agree that its contents are true.

Mr. Sizer: We leave it entirely to Mr. Miller. We cannot offer it, but if Mr. Miller wants it we are entirely willing to offer it and to have it filed with the evidence.

Mr. Miller: I ask it to go in only for the purpose of impeaching Dr. Schmiedeberg. If it cannot go in for that, it cannot go in at all.

The Court: It must go in for all purposes or none. If it goes in for all purposes, it may go in.

Mr. Miller: If it goes in as a part of our evidence which we cannot contradict, that is one thing; if it goes in for consideration by the jury for what it is worth, that is another thing.

The Court: I understood it was to go in that way, for what it is worth. You could show contradictory statements or anything else if you can by it.

Mr. Miller: Then with that understanding we are perfectly willing for it to go in.

The Court: Now, it goes in, then, by agreement, for any legitimate purpose.

Mr. Miller: Except that it is not offered as our testimony.

Mr. Sizer: You are offering it.

The Court: It goes in by agreement; it is not offered by either of you.

(The paper referred to is as follows:)

"OPINION CONCERNING THE CAFFEINE CONTAINED IN COCA-COLA AS REGARDS ITS EFFECTS UPON HEALTH.

By Dr. Oswald Schmiedeberg. (Translation by Dr. J. W. Mallet.)

I have been asked by Mr. Harold Hirsch, of general counsel for the Coca-Cola Company of Atlanta, Ga., to express my opinion on the question whether coffein (caffeine) in the quantity in which it is contained in the Coca-Cola syrup manufactured and put upon the market by the said company is injurious or detrimental to health.

In the indictment against the Coca-Cola Company it is said, 'The caffeine in this food product is derived from

waste tea leaves, and not from the cola nut.' As regards this assertion, it must at the outset be remarked that for the question of the significance of caffeine in its relation to health it is a matter of indifference from what source the caffeine of this 'food product' is derived, whether from tea leaves or from cola nuts, or whether introduced as pure caffeine. For the influence of the latter, in its effects upon health, there is only to be considered the quantity in which it occurs in Coca-Cola syrup.

Caffeine is the constituent upon which depend the significance of coffee, tea and some other food materials. This significance is far more widespread than that of alcoholic beverages. In all parts of the world, coffee and tea and other food materials containing caffeine, such as cola, Paraguay tea, and guarana paste, are made use of by the most widely different races of mankind, by people professing all forms of religious belief, by men and women, by young without special restriction, whilst alcoholic drinks are prohibited to Mohammedans by religious rule, and women and children, as well as many men, refrain from their use.

Notwithstanding the unparalleled wide distribution of these food materials, cases of illness from their use, which can be held to be due to their content of coffein, are not known. Coffein, therefore, in the quantity in which it is taken with these food materials, may with entire certainty be set down as harmless, on the basis of the experience obtained on so large a scale during several centuries.

In this respect the food materials containing coffein are quite essentially distinguished from alcoholic beverages and from tobacco, the misuse of which so easily gives rise to cases of poisoning and of illness.

The harmlessness of coffein in the food material under consideration is confirmed and explained by the nature of these food materials for the human organism, and it has led in all parts of the world, both civilized and savage, people to instinctively discover and use as food material all plants which contain coffein or the analogous theobromine of similar effect. These plants are the tea shrub, the coffee tree, the cola nut tree, the bush tea shrub (Cyclopia), the chocolate tree, the South American vine, paullliana sorbilis, which yields guarana paste, and finally two species of *ilex*, one of which furnished the so-called Appalachian tea of North America, and the other (ilex l'araguayensis) the Paraguay tea, or yuba mate, of the southern regions of South America. But it is not, as one might assume, the pleasant taste which has led to the use as food material of different products from these plants. An in-

fusion of Paraguay tea, for example, is far from being agreeable in taste, yet is very highly valued by the inhabitants of the region where the shrub is indigenous. Also the valued good flavor is given to coffee beans by roasting, and to the black infusion prepared therefrom by addition of sugar, milk or cream, and to the leaves of the tea shrub by addition of sweet-scented flowers. Hitherto no plant containing coffein or theobromine has been discovered which has not found use as food material.

All the circumstances already mentioned—the instinctive discovery of all so far known plants containing coffein or theobromine, in all parts of the world, their universally wide distribution in spite of their original lack of pleasant taste, making them uninviting—all these facts prove beyond doubt that the importance of these food materials depends exclusively on their content of coffein or theobromine. The action of coffein, with which only we have here to do, concerns, at the same time, in a quite peculiar way, the central nervous system and the muscular system on which the movements of the body depend. When the muscles and nerves are fatigued by severe or long-continued activity, activity can only be continued, if at all, by the most strenuous exertion of the will. Coffein in the quantities in which it is taken with food materials, so acts upon the nerves and muscles that the feeling of fatigue disappears, because the stimulus of the will more easily reaches the muscles, and the supply of energy of the latter can be more easily and efficiently used than in the condition of fatigue without coffein. Under the influence of the latter, also, the more strenuous intellectual activities are more easily prolonged, and the feeling of mental lassitude is less perceptible.

Coffein is hence a means of refreshing bodily and mental activity, so that this may be prolonged when the condition of fatigue has already begun to produce restrain and to call for more severe exertion of the will, a state which, as is well known, is painful or disagreeable.

This advantageous effect in conditions of fatigue of small quantities of coffein, as it is commonly taken in coffee or tea, might, however, by continued use become injurious, if it were in all cases necessarily exerted; that is to say, if by coffein the muscles and nerves were directly spurred on to increased activity. This is, however, not the case, and just in this lies the popularity of the effect in question: The muscles and the simultaneously acting nerves only under the influence of coffein respond more easily to the impulse of the will, but do not develop spontaneous activity, that is, without the co-operation of the

will. If after the use of coffee or tea no work is done, as for example, after taking coffee at the end of a dinner, muscles and nerves remain quiet as if no coffee had been taken. In such cases the pleasure which good coffee and tea procure are decisively in favor of their use.

This character of coffein action makes it plain that these food materials do not injure the organism by their coffein content, and especially do not by continued use cause any chronic form of illness as alcoholic beverages so easily do.

If strong coffee and aromatic tea, especially the so-called green kind, produce with some persons agitation, so that for instance, after the use of these beverages in the evening such persons suffer at night from sleeplessness, this does not depend upon the coffein, but upon the ingredient from which, as has been mentioned the aroma and pleasant taste of well prepared coffee and tea are derived. There are persons who cannot in general bear tea or coffee, while Paraguay tea, with its less agreeable taste, suits them well, in spite of its containing coffein.

Experience and the facts obtained by experiment make it therefore indisputable that the quantities of coffein which are for the most part taken in with coffee or tea used daily for a whole lifetime are non-injurious to health, since they neither give rise to acute or chronic poisoning, nor weaken the organism so as to dispose it to attacks of illness.

It may be asked further, how large are the quantities of coffein which are usually, or as a maximum taken in coffee and tea. A small cup of coffee, of 150 ccm — 5 ounces—which has been prepared from 15 grm.—230 grains of coffee beans—contains 0.1 to 0.12 grm.—1.5 to 1.8 grains of coffein, and the same amount is contained in a cup of infusion prepared from 5 to 6 grm.—75 to 90 grains of tea leaves. If it be assumed that a man daily, in the morning, at noon, or in the afternoon, and in the evening, drinks altogether five cups of coffee or tea, or partly coffee and partly tea, he takes in this 0.5 to 0.6 grm.—7.5 to 9.0 grains of coffein. These moderate quantities are thoroughly harmless. Many persons, especially women, in countries where tea-drinking is wide spread, may easily bring the number of cups to double or even several times these figures. Let us assume that the maximum daily ingestion amounts to ten cups of tea or coffee altogether. These contain 1.0 to 1.2 grm. — 15 to 18 grains of coffein. Even such doses cause no disturbance of health if they be taken, not in the form of pure caffeine all at once, but in coffee, tea and other prepara-

tions in a diluted state and in divided portions in the course of the day. In agreement with this is the direction of the Pharmacopoeia of the German Empire that the largest daily dose of coffein should not exceed 1.5 grm.—23 grains.

Coca-Cola Syrup contains, by the accordant analysis of Dr. Mallet, of the University of Virginia, and Dr. W. D. Bigelow, of the Department of Agriculture, 0.19 to 0.24 grm., in the average of 0.22 grms., or in round numbers, 0.25 grm.—3.8 grains of coffein in 100 grm.—1,540 grains of syrup. As regards content of coffein, therefore, 40 to 45 grm.—600 to 700 grains of Coca-Cola syrup—are equivalent to a cup, 200 grm.—3,000 grains to five cups, and 400 grm.—6,000 grains— to ten cups of coffee or tea.

From these data it follows in the most positive way that 200 to 400 grm. of Coca-Cola syrup taken in divided portions daily, will not be injurious to health. In certain respects, the Coca-Cola syrup is even more harmless than the corresponding quantity of coffee, or tea, since it does not, like these, produce agitation and therefore cause sleeplessness.

According to the communications which have reached me, about thirty grm.—one ounce of Coca-Cola syrup—is used to a glass of about 210 ccm. of the beverage. There might therefore be taken daily of this beverage 1,400—2,800 ccm. without any fear of injury to health, from the quantity of coffein contained therein. Rather might the amount of liquid and of sugar taken at the same time prove injurious by impairment of the digestive activity of the stomach. As a matter of fact, such large quantities of the beverage will, but rarely, if ever be taken. Most consumers will undoubtedly limit themselves to less. In such cases injury is entirely out of the question. Indeed, the misuse of Coca-Cola by taking it in excess, as so often happens with alcoholic drinks, anyway is probably not to be feared. Not only can no well-founded objection be urged against the manufacture of food products containing coffein by the introduction of this in any form, but rather should the extension of such manufacture be regarded with favor in the interests of the public welfare. Undoubtedly alcoholic drinks belong to the most injurious class of food products, and the contest against their use, and especially their misuse is thoroughly justified. This can be most successful only by seeking to replace alcoholic beverages by other and harmless food products. Among such harmless food products the most suitable with which to take up and carry through the war against alcoholic drinks are coffee, tea, cocoa, chocolate, and in general, all natural or arti-

ficial food materials which contain coffein or theobromine, on account of their advantages and agreeable effect above described.

Carbonated waters, for example, which are taken with pleasure for their refreshing action, will not fulfill the purpose in question, since they exert none of the special effects upon the organism that tea, coffee, etc., do. In the contest with alcoholic drinks it is of importance that the food materials which are to replace them shall be harmless, contain coffein or theobromine, and also actually be consumed upon a large scale. In this way Coca-Cola may be of value.

On the basis of the preceding explanation, I sum up my opinion thus: That Coca-Cola syrup represents a beverage containing coffein, and that, even in the maximum quantity which may be generally taken daily, it cannot, because of its coffein content, be accounted injurious to health."

BY MR. MILLER:

Q. I will ask you whether or not caffeine is a means of refreshing bodily and mental activity so that this may be prolonged when the condition of fatigue has already begun to produce restraint and to call for more severe exertion of the will, and if you say it is or is not, say why?

A. It is.

Q. Why?

Mr. Sizer: I object. That is a matter in chief and not contradicted by any of our witnesses.

The Court: I do not understand that question.

(The question was read.)

Mr. Miller: That was an answer that was borrowed from Doctor Schmiedeberg and he drew from that the inference that this was a beneficial agent, and I want to show by this witness that it is a non-beneficial agent for that very reason.

The Court: That does not affect the point, but I still do not understand the question.

(Question read again).

The Court: I catch it now.

Mr. Sizer: That is a quotation from Dr. Schmiedeberg and the witness answered that statement is true, and I submit he cannot go into his reasons why it is true. It is not in rebuttal of anything.

The Court: He agrees with Dr. Schmiedeberg.

Mr. Miller: I do not like to have adversary counsel cut my questions in two. I said: "If you say it is, say why."

Mr. Sizer: I do not want to cut your questions in two, but to cut the answer.

The Court: If he agrees with Dr. Schmiedeberg, it is not contradicting anything.

Mr. Miller: But here is the point: Dr. Schmiedeberg drew from this statement an inference that it was a beneficial agent.

The Court: That is a question for the jury to determine, whether it is beneficial or not.

Mr. Miller: One way they have to determine it is from scientific men. I submit if they can determine it from one scientific man they can from another. And this is a scientific man, and I want to know the conclusions he draws from that.

The Court: I exclude it.

Mr. Miller: If your Honor excludes part of the answer to the question, then I ask to withdraw the question.

The Court: You may withdraw the question.

Mr. Sizer: When he asks a question and it is answered, he cannot withdraw it.

The Court: He can withdraw that question. We must get along.

BY MR. MILLER:

Q. I will ask you whether or not any more harmful effects follow the use of tea and coffee than in the case of Coca-Cola and vice-versa, and if you say there is or is not, state why?

Mr. Sizer: That is not proper. He has stated the effects following the use of caffeine, and now if counsel wants to know the effects over again and your Honor holds that matter is competent, where will we end?

The Court: You brought in the question of coffee and tea, that it has an injurious effect, and therefore argued that caffeine in Coca-Cola has not an injurious effect, and they can rebut that. If you can show in rejoinder that that is due to other things in the coffee and tea, you can do it. We have started into the coffee and tea business and we will proceed.

Mr. Sizer: I object to the form of the question. He said "more harmful."

The Court: I did not catch that part.

Mr. Miller: This witness made that—

The Court: I cannot allow that.

Mr. Miller: Then I move to exclude—this morning I objected to a comparison between tea and coffee and Coca-Cola, and when it was ruled on against me I noted an exception and now I want to rebut that.

The Court: I do not think you made the objection in

that way. You made a general objection as to the effect of beverages. Coffee and tea were not specially mentioned.

Mr. Miller: Then I move to exclude the portion of the witness' answer as to the comparative effects of tea and coffee.

The Court: We will leave that until we get through with this witness. I do not preclude you, however, from raising that question.

BY MR. MILLER:

Q. Can caffeine administration be of any benefit to the health of persons?

Mr. Sizer: I object to that. I submit that is not proper.

BY MR. MILLER:

Q. I mean, in the form of beverages about which Dr. Schmiedeberg was asked.

Mr. Sizer: That is the very question in the law suit, and one on which all the witnesses for the Government were examined.

The Court: Now, I rule on that this way: If any of the witnesses have contended that it had any beneficial effect from the administration of caffeine in beverages, the Government may rebut that.

Mr. Sizer: I object to that form of question. He asked if any beneficial result can come from caffeine.

The Court: If any witness has testified to any particular beneficial result, then the Government witnesses may be asked about it.

Mr. Miller: That requires me to read that portion of Dr. Schmiedeberg's deposition throughout which dealt with the beneficial effects of it. I certainly think we ought not to disagree about that. I do not like to make the statement without reading it.

The Court: There is a good deal in that deposition that is objectionable that I did not exclude, on the ground that he stated generally, but there was not exception made.

Mr. Miller: I will ask leave to go over it and make objections. It was read very rapidly, I did not have a copy of the deposition before me.

The Court: It is like testimony taken in oral form. Counsel are supposed to make exceptions when they hear it.

Mr. Miller: He does undertake to set out certain beneficial effects.

BY MR. MILLER:

Q. Does or not caffeine relieve fatigue?

A. It does not.

Q. If caffeine excites the nerves, is that or not beneficial to health?

A. It is not.

Mr. Sizer: I submit that is a conclusion and not competent.

Mr. Miller: That is just exactly what the witness said; I am using his language.

The Court: I have allowed testimony as to the general effect on health. I understand that means it has got an effect on general health, I will allow it.

BY MR. MILLER:

Q. If caffeine be taken and the person sit silent—I mean, sit passive, and does not undertake to do any work, does it necessarily follow that the nerves of the person and the brain are artificially or over-stimulated?

A. It does not.

Q. Does or not strychnine have an influence on the muscles?

Mr. Sizer: I object to the strychnine business.

Mr. Miller: Well, this witness stated.

Mr. Sizer: It is immaterial if he did state it.

Mr. Miller: It goes to show what this witness knew about drugs, I suppose.

The Court: I think it is immaterial and we will not go into the strychnine matter. I mean by that it is too remote.

BY MR. MILLER:

Q. I will get you to state whether or not caffine acts very well on persons with heart disease.

A. I should never use it in heart disease.

Q. Why not?

A. Because it is too apt to cause an irregularity of the heart; it is not a good heart drug.

The Court: I think that is about the same as trying to prove it has an injurious effect.

Mr. Miller: That is in rebuttal to Dr. Schmiedeberg's statement.

The Court: That was the tendency of your testimony.

Mr. Miller: We wanted to show the harmful effects.

The Court: Yes, I think going back to beneficial effects, that is another way of proving it in chief. I limit this to where some different beneficial effect is—

Mr. Miller: (Interrupting) I want to get his answers and we will be through.

The Court: In other words, the proper purpose of rebuttal is not a repetition but the bringing out of the new points.

Mr. Miller: While the point is on my mind, I move to strike from this deposition the part that deals with chocolate as I see he has reference to chocolate here as one of the beverages that he is discussing, and I submit that is in chief.

Mr. Sizer: It is our testimony in chief that we offer—this deposition is our testimony in chief.

Mr. Miller: I insist that would be excluded under the ruling made by your Honor.

Mr. Sizer: Your Honor has excluded any questions of chocolate and cocoa on the ground that it had not been shown that theobromine in the chocolate and cocoa is similar in its action to caffeine, and that the caffeine in chocolate and cocoa was not sufficiently great to justify comparison between chocolate and cocoa and tea and coffee. This witness states that the physiological action of theobromine is the same as caffeine, and therefore I submit it is material to compare chocolate and cocoa with tea, coffee and Coca-Cola.

The Court: We will not start into that chocolate matter at this stage of the case; I sustain the exception.

BY MR. MILLER:

Q. Doctor, what is the effect of theocin and theophyllin, relatively?

Mr. Sizer: I do not think that is in rebuttal of anything.

Mr. Miller: That is in answer to what was drawn out as to the Allard case, because they were poisoning cases, and I have shown that caffeine was broken up into three groups.

The Court: Read the question.

(Question read as follows: "Doctor, what is the effect of theocin and theophyllin, relatively?")

The Court: You may ask whether they have the same effect on the human system.

Mr. Miller: Yes.

The Court: You may ask that question, the same physiological action, whether they do or not.

The Witness: There is no difference in their physiological action.

Mr. Miller: Well, that is all.

RECROSS-EXAMINATION,
BY MR. SIZER:

Q. You say, Doctor, there is no difference in the effect of theocin and theophyllin physiologically?

A. Yes, sir.

Q. How do you know that?

A. Never has been shown to be.

Q. Do you have any affirmative knowledge that they are the same in their effect?

A. The best authority I have on the subject for the action of poisons says they are identical.

Q. And what authority is that?

A. Kobert.

Q Well, and that means he says they are identical in their composition?

A. What I infer from his statement is he says they are identical in their action and their composition—and I infer from that statement—he is talking about the action of drugs, and when he says "identical," he means in both.

Q. He simply says the two are identical?

A. Yes, sir.

Q. And from that you draw the inference that they are identical in their action?

A. Yes, sir.

Q. As a matter of fact they are identical in their chemical composition?

A. Yes, sir.

Q. But no one knows whether they are identical in their physiological action or not?

A. Oh, yes.

Q. You don't know it?

A. I don't know to the contrary.

Q. I say, you don't know that they are identical, do you?

A. I think I do.

Q. Now, how do you know it only from that statement of Kobert?

A. May I explain?

The Court: Yes.

A. One firm in Germany puts out a substance as theocin and another puts it out as theophyllin. They would not call it theophyllin unless it were theophyllin.

BY MR. SIZER:

Q. And they call it theocin?

A. No, sir; they call it theophyllin.

Q. Well, is this the difference between the two, that theophyllin is formed in the body and theocin is a synthetic chemical composition?

A. There is that difference that you have applied to theocin, that theocin is a factory product.

Q. That theocin is the name of the manufactured article that contains the same elements and in the same

proportion that theophyllin is formed in the body, is that true?

A. Yes, sir; I want to help you; it is not only in the same proportion, but the same chemical constituents.

Q. Well, theophyllin is found in tea?

A. A trace.

Q. You don't find any theocin in tea?

A. Yes, you do, because theophyllin is there.

Q. Then, what you call theophyllin and theocin, you find it in tea?

A. There is no difference between the two.

Q. Now, Doctor, it is known, is it not, that caffeine is broken down in the system into theophyllin?

A. Yes, sir; that is known.

Q. And it is not known that any theocin is produced in the breaking up of caffine, is it?

A. A substance which is identical with theocin is formed in the body, so you could, if you wish, say theocin is formed in the body.

Q. Is that name of theocin properly understood as applying to the synthetic composition and theophyllin is a name that is applied to a substance that is found in the body or formed in the body?

A. No, sir. Theocin is the patented name of the manufacturer who wishes to protect his method of manufacturing, and theophyllin is the name of that substance and is put out as such a substance under that name by another house.

Q. I believe you studied under Dr. Schmiedeberg?

A. Yes, sir.

Q. Well, didn't you testify in the Bleached Flour cases that Dr. Schmiedeberg was the greatest living pharmacologist?

A. Yes, sir; the greatest who ever lived.

Q. I believe you say you do not consider Dr. Hollingworth's experiments of any value, Doctor?

A. Yes, sir.

Q. For the reason that they are based on psychology and not on physiology?

A. No, sir; you have that wrong.

Q. On what ground do you base them?

A. They are based on a thing which is called experimental psychology which does not exist.

Q. Are you an expert in psychology?

A. No, sir; but I am an expert in physiology.

Q. Then why do you undertake to criticise the experiments of a man who conducts experiments along a branch in which you are not an expert?

A. Because I happen to be an expert in physiology, and just as soon as you go far enough to experiment, you get into physiology.

Q. Well, didn't you cite in your testimony in chief some experiments made by Rivers & Weber?

A. Yes, sir.

Q. As proof that there was depression following the use of caffeine?

A. Yes, sir.

Q. Is it a fact that those were psychologists?

A. They are open to the psychic sphere—

Q. I say, they were psychological experiments?

A. No, not experiments.

Q. What kind were they?

A. Because they were carried on to the period of fatigue and they were physiological to a certain extent, but I will agree that the same criticism obtains in the case of the Rivers & Weber experiments.

Q. In other words, they were of no value for the same reason that Dr. Hollingworth's were of no value?

A. Yes, sir.

Q. Then why did you state them in support of your opinion?

A. I did not realize that fact.

Q. Well, you had read those experiments before you testified?

A. Yes, sir; cursorily.

Q. And you cited those two experiments in support of the opinion of yours expressed on examination in chief?

A. Yes, sir.

Q. And now you come along and say those experiments were absolutely valueless?

A. Yes, sir; because I had not considered them in detail when I testified before.

Q. And so in your opinion expressed in your former testimony you based it on experiments that had no value?

A. Yes, sir; but of very little value.

Q. Now, these Zenetz cases. Isn't it true that in all three of them the persons were sick before they were given the caffeine?

A. No, I think not.

Q. Didn't one of them have typhoid fever?

A. I would like to refresh myself from the notes, please.

Q. Don't you remember about that now?

A. I do not remember, I do in a general way, but I would like to see a report — I would not like to make a broad statement, Mr. Sizer.

Q. Now, just look and see if one of them didn't have typhoid fever.

Mr. Miller: We have had it translated and have the English, and it would probably be more readily referred to, but if he reads German.

The Witness: No, no case of typhoid.

BY MR. SIZER:

Q. Did any of them have any diseases?

A. Yes, sir; two of them were sick.

Q. What did they have?

A. One of them had pneumonia and another one had kidney condition, a chronic nephritis.

Q. And the third one had a heart so hard that you could not cut it with a knife?

A. Yes, sir; all three of them had a heart like that.

Q. And at least two of them were sick before the caffeine was given?

A. Yes, sir; that is why they gave them the caffeine, because they were sick.

Q. What about the other, the third one was reported as not well?

A. No, sir; that was a mistake.

Q. What was the report as to that third one?

A. Not feeling quite well, just as you do not feel quite well today.

Q. Well, you need not make any comparison. Isn't the report there that she was not feeling well?

A. The report says she was a healthy young woman.

Q. Well, it says that she was unwell?

A. No, sir; not feeling quite well.

Q. Just translate the literal language, that is true, isn't it, she was unwell, not very well?

A. No, it says: I will read the German: (The witness read the German text) which means because she did not feel quite well, just what I said.

Q. Did not feel quite well?

A. Yes, sir.

Q. That is your translation of it?

A. Yes, sir.

Q. Now, read the heading of that article.

A. (Reading). "The use of caffeine in diseases of the heart and kidneys."

Q. That case comes under that head?

A. No, sir; it does not, because he distinctly says this woman is not well—

Q. (Interrupting.) That came under that head that you gave awhile ago?

A. No, that refers to his deductions as to the use of caffeine in heart and kidney diseases, and he gave the opinion that it should not be used in those cases.

Q. Well, it is under that same article?

A. Yes, sir.

Q. And under that same head he gives these three cases, and says that caffeine should not be used in heart diseases?

A. Yes, sir; and kidney diseases.

Q. And kidney diseases?

A. Yes, sir; I have myself reported cases of well persons in connection with other subjects—

Q. (Interrupting.) I am not asking you anything about what you have done—I desire now to ask you about the tube that you had or that you referred to as being used on the rabbits—

The Court: (Interrupting.) As it is now two o'clock, we will adjourn until tomorrow morning.

(Thereupon, the Court, at two o'clock p. m., adjourned until nine o'clock a. m., Tuesday morning, April 4, 1911.)

CHATTANOOGA, TENNESSEE

TUESDAY MORNING, APRIL 4, 1911

NINE O'CLOCK, A. M.

Court met pursuant to adjournment.

Appearances: Same as before.

The Court: I have been considering one question that arose at an early stage of the case and on which I either overruled the exceptions or took no definite action at the time. That is the quetsion as to the competency of evidence as to the meaning of the words "Poison" and "Poisonous," as used in scientific works, by scientific men. After carefully considering the Act, I have concluded that the words "Poison" and "Poisonous" as used in it are used in their ordinary sense and I therefore exclude from the evidence any testimony of any witness on either side as to the meaning of the words "Poison" or "Poisonous" as used in science. I do not exclude any statement by any witness in so far as it throws light on his own testimony as explaining any opinion that he expresses when he declares that a given substance is or is not a poison or is or is not poisonous, but I do exclude that evidence in so far as the scientific meaning of the words "Poison" and "Poisonous" might be regarded as controlling the questions in this case. I do not, of course, exclude any extracts from any scientific authors that may

have been introduced in evidence containing the words as to the specific effect of any given medicine or drug or substance, but merely exclude the scientific definition as a controlling factor in this case.

DR. WILLIAM F. BOOS,
resumed the stand and testified as follows:

CROSS-EXAMINATION,

BY MR. SIZER,

Q. I want to ask you one more question about the Allard case: It is not a fact that the report of that case shows that the caffeine was administered to counteract the effect of theocin?

A. I don't remember whether it was or not. If it was, I should consider it a very great faux pas on the part of the man who administered it.

Q. He made a mistake?

A. Yes, sir; he would intensify the action of the theocin.

Mr. Sizer: I believe the report of that case has been put in evidence.

Mr. Miller: I think the report of that and of the Lemaire and of the Zenetz cases are all in evidence.

Mr. Sizer: I think you said they would be.

Mr. Miller: They are all in evidence; if they have not been copied, they will be.

The Court: Have you any disagreement as to the proper translation?

Mr. Sizer: They are all translated by agreement.

The Court: There seems to have been some conflict of opinion as to the condition of the lady.

Mr. Sizer: There was some contradiction on that—

The Court: I do not want any disagreement or misunderstanding as to the character of the translation.

Mr. Sizer: I think that was cleared up. They gave a literal translation. It was meant: "Not very well."

The Court: One of them said she did not feel entirely well. You had better not have any misunderstanding about that.

Mr. Sizer: We will look and see the copies.

Mr. Miller: There are three that I now pass you—that is the Zenetz, the Allard and the Lemaire cases, but I want to reserve the right if Dr. Boos says that is not a correct translation, to let him correct them. I pass them to counsel now. I understand it is a correct translation, but I am not a German scholar myself.

Mr. Sizer: Now, taking up the Zenetz case, your Honor will remember that you called attention a few days ago to the fact that the article consisted in part of a dissertation by Dr. Zenetz on the use of caffeine generally and then that was followed by the report of the two cases.

The Witness: Of three cases.

Mr. Sizer: But this paper still has the whole thing in, the first four pages is the dissertation.

The Court: That will be excluded.

Mr. Sizer: It that is offered I move that it be rewritten so as to exclude the opinion by Dr. Zenetz which is not competent or relevant.

Mr. Miller: As a reported case, that might be excluded, but on cross-examination we asked some of their witnesses on the other side as to the ability and standing of Dr. Zenetz—

The Court: That is the very thing I intended to exclude, that is was simply admitted originally as a recorded instance of what he thought was caffeine poisoning.

Mr. Miller: On cross-examination of their witnesses we asked them as to the standing of Dr. Zenetz and if he did not draw certain conclusions as to this drug.

The Court: I do not recall any. I recall excluding his opinion in one instance and if it was admitted otherwise it escaped my attention. I shall exclude it.

Mr. Miller: Doctor Marshall, and, I think —

The Court: I intended and I think distinctly stated at one time that the part of the article in the nature of a treatise for an expression of opinion as of the writer, was excluded, that all that was admitted was the record of the case.

Mr. Miller: To say the least of it, we have no objection to admitting the conclusions drawn by the author there, if that is what your Honor rules. If your Honor overrules that —

The Court: I do so.

Mr. Miller: Of course, we think that is a legitimate part of it and should be permitted to be read with the rest, and we except to that ruling.

The Court: You may note the exception. Who made that translation?

Mr. Hirsch: Dr. Boos made the translation of the Zenetz case.

The Witness: I made the translation of the Zenetz and Dr. Emery translated the other cases.

The Court: If there is any agreement as to the correctness of the translation, I will take it up.

The Witness: We agreed on the Zenetz case.

BY MR. SIZER,

Q. Would the effect of administering a substance to a patient, whether a rabbit or human being, have any bearing on the physiological effect of that substance on the patient?

A. It might possibly to a certain extent, yes.

Q. For instance, if you were trying to give a certain kind of medicine to a child or to an insane person, a person incapable of exercising judgment and self-control, would it make any difference whether you dropped that substance in the mouth of the patient by a dropper or whether you first put a block of wood in the patient's mouth to hold his mouth open and then put the tube through the block and then administered the medicine into the stomach through that tube?

A. You are talking about children or insane patients?

Q. Any person incapable of exercising judgment and self-control.

A. I do not wish to compare children or insane persons with rabbits.

Q. I didn't ask you to do that. Just answer the question as I asked it.

A. Oh, yes; an unwilling being, a human being, would be decidedly affected by such treatment.

Q. Is it not further true that the mixing of food in the mouth with the saliva has an important effect on the assimilation of the food?

A. I do not know that we were discussing the food in that way —

Q. Just answer the question.

(The question was read to the witness.)

A. Did you ask me before about feeding a patient?

Q. Answer the question.

Mr. Miller: I submit that is not a pertinent question. There has not been any evidence that food was administered through a tube.

The Court: Objection overruled.

BY MR. SIZER,

Q. I asked for an answer to that question.

The Court: The question will speak for itself and if the witness wants to qualify his answer he may do so.

A. Of course it would affect the digestion if it were a food such as would be affected by the action of the saliva. If it were a solid food, the solid food would be acted on by the saliva but not the liquid food.

Q. A carbohydrate?

A. Not in solution; it is not acted on.

Q. It is not acted on by the saliva?

A. It is momentarily but that ceases when the food reaches the stomach.

Q. It is acted on while the food is passing from the mouth to the stomach?

A. I think if you were to drink a solution of a carbohydrate that the action would be impossible to trace because of the rapidity of passage from the mouth to the stomach.

Q. But you have stated it would have some effect on it?

A. It would not have any effect on the sugar in the least. It would have some effect on the starches but not on the sugar.

Q. Now, would the effect of the rubbing of the tube on the mucous lining of the stomach have any effect on it?

A. Hardly.

Q. Might it not destroy some of the cells in the lining of the stomach?

A. In the lining of the stomach did you say?

Q. The mucous membrane?

A. If it is done very roughly, that is conceivable, but I know of patients who have had their stomachs washed out every day in the year and have had no trouble from the tube.

Q. Would it be advantageous to a person to have the tube put in his stomach that way?

A. Most decidedly when he has catarrah of the stomach.

Q. But suppose he was well?

A. I don't think it would hurt him a bit.

Q. To have his stomach washed out with a rubber tube?

A. That is my opinion.

Q. Have you ever tried it with a healthy man?

A. I have tried it on myself.

Q. How often?

A. I washed out my stomach to learn how it feels once every day for a week. I did that to find out what the sensations of a patient were. Sometimes we have trouble in passing it and I wanted to know where the trouble was and I passed that tube on myself and after having passed it for a number of days I did not mind it.

Q. If you kept that up for sixty days would not that result in loss of weight?

A. No, sir.

Q. You are sure of that?

A. I am sure there is no reason why it should.

Q. You have never tried it more than a week at a time?

A. No, sir; never tried it more than a week at a time, but if a man with stomach trouble gains in weight on the application of the tube, you would not expect a healthy person to lose weight.

Q. Does that necessarily follow?

A. Yes, sir. The healthy person's stomach is much more resistant than the stomach of a sick person.

Q. Are you speaking from actual experience?

A. Yes, sir.

Q. Or theoretically?

A. No, sir, I have done a great deal of stomach work. That is practically my work in my practice, stomach work.

The fact is you give them that treatment where the disease is causing them to lose in weight, where there is decided interference with gastric digestion and in consequence of that there would be loss in weight, but these people do not remain at the same weight. When the stomach is washed out, they gain in consequence of the treatment.

Q. Is it easy or difficult to put this tube down into the stomach of a rabbit without causing the death of the rabbit?

A. It is all a matter of technique.

Q. In other words, if you do it properly there is no danger of killing the rabbit?

A. No danger whatever.

Q. And if a man kills half a dozen rabbits endeavoring to put the tube down into their stomachs, that shows that the man is either incompetent or careless?

A. If he stopped killing them after killing a half a dozen, it shows that he learned the method.

Q. That he is improving?

A. That he has the method.

Q. But it does not show when he starts out that he was incompetent and did not know how to do it?

A. That is so with every person who passes the tube.

Q. In other words, his technique was not good.

A. He was awkward.

RE-EXAMINATION.

BY MR. MILLER:

Q. Is there any starch in Coca-Cola or Coca-Cola syrup as manufactured?

A. I believe there is some starch in the cola but I don't know how much of that gets into the Coca-Cola syrup.

Q. Did you hear the formula as given by the analyst?

A. I did.

Q. Was there any starch in that formula?

A. I think not.

Q. Would that distinction you draw as to insane persons or children being forced to take the tube through a block, as counsel expressed it, hold good where only Coca-Cola syrup would be administered through a stomach pump to a rabbit and the rabbit would afterwards eat his food in a normal way?

A. If the rabbit is eating his food in a normal way, it would not in the slightest degree affect his digestion because this is to determine the action of this one substance, independent of his food.

V. K. CHESSNUTT,

the next witness called by the Government in rebuttal, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION.

BY MR. MILLER:

Q. Mr. Chesnutt, what is your profession?

A. A chemist.

Q. What is your occupation and connection with the Bureau of Chemistry at Washington?

A. Assistant Chemist in the Bureau of Chemistry, drug laboratory.

Q. State whether or not you have had occasion to analyze coca of both varieties for the purpose of ascertaining what per cent of tannin there is in it, and if so, tell us what the percentages are.

A. I have. I have found in the Truxillo variety .18 of one per cent, in Truxillo, that is the Erythroxulon Truxillense: and in the variety Huanuco, I found .26 of one per cent.

Q. When did you make these analyses, Doctor?

A. About one week ago.

Q. I will get you to state whether or not you found or have had occasion to determine the percentage of tannin that is in the cola nut.

A. Yes, sir.

Q. What did you find?

A. I found in the cola nut 1.12 per cent.

Q. That is how much?

A. That is 1.12 per cent.

Mr. Miller: You may cross-examine him.

CROSS-EXAMINATION.

BY. MR. HIRSCH:

Q. Doctor, will you tell us your method or how you

ascertain the tannin in both species of the coca?

A. I used the method described on page 150 of the Bulletin No. 107 of the Bureau of Chemistry Methods of Analyses. It is the Proctor modification —

Q. (Interrupting) Bulletin 107?

A. Yes.

Q. And at page 150?

A. Yes, sir. It is the Proctor modification of the Lowenthal method.

Q. Could you give me the details of that method?

A. Yes, sir.

Q. Well, please do so.

A. The most essential thing is to be sure of your oxalic acid.

Q. And what do you mean by that?

A. To know that it is absolutely pure, and that I did, I checked it up with a number of substances, permanganate of potash, and they were bound to agree perfectly. That is a preparation made up by another individual so that we were absolutely sure of the oxalic acid. I crystallized it several times, and took every precaution to have that pure. That was our starting point.

Q. In other words, you got your oxalic acid pure?

A. Yes, sir; as pure as it could be made under those conditions. Then we used a solution of sulph-imbegotate of soda which was free from the ordinary impurities, and it was especially adapted for this purpose.

Q. Especially adapted for this purpose?

A. Yes, sir.

Q. In what way?

A. Because it was free from any other coloring which would not give a clear end point than the citration. I made up that according to the strength given in the bulletin and then made up the other solutions, saturated solution of salt to which sulphuric acid was added. That makes more complete the precipitation of the tannin.

Q. What did you precipitate the tannin with?

A. I am describing the general method. You asked me for the particulars. I am giving the particulars of the method.

Q. Well, give me the details.

A. That is what I am doing.

Q. You will tell me how you precipitated the tannins?

A. Yes, sir. We made up a solution of saturated salt solution in distilled water to which was added the amount of sulphuric acid required under Bulletin 107 to make one of the mixtures to precipitate the tannin. We used in addition the talc, purified talc, free from anything

that would have affected the reduction of the permanganate of potash used. I think I have all those. If you will read what I have described, we will see if I have given them all.

The Court: We can't go over and read the testimony.

The Witness: I think I have given them all as described in the Bulletin there. Do you wish further details?

Q. Yes.

A. The coca leaves used was one of the authenticity of which is vouched for by Dr. H. H. Rusby of New York, our expert pharmacologist. I used these leaves because I knew there could absolutely be no mistake about them.

Q. That, you took that from what Dr. Rusby said, that they were coca leaves?

A. Well, he looked over them and Dr. Rusby is an authority, he has traveled and knows these varieties.

Mr. Sizer: I object to that.

The Court: Just state what you did.

The Witness: I took ten grams of the finely powdered leaf, weighed that out carefully and diluted it for half an hour with 200 cc of water, and allowed it to cool. Transferred to 500 cc flask and diluted with water to volume—that is I had then ten grams of the coca leaf dissolved in 500 cc of water. Then I filtered and allowed the first portion of the filtrate to be discarded. Then I filtered the remainder, and of that I took 10 cc. Then to this 10 cc I added 750 cc of distilled water and then added 25 cc of this solution of sulphimbegotate of soda. I had then the coca leaves and the extract of the sulphimbegotate of soda and with that I took permanganate of potash and allowed that to go in over the buret and carefully measured the volume of permanganate of potash required to bring the sulphimbegotate of soda, which is a blue solution, to a suitable golden yellowish color. I stopped citrating at that point and read the reading on the buret. I got the reading which we will designate as A. I took all this solution of coca in the 500 cc of water and I took 100 cc of that to which I added 50 cc of the gelatin solution. This gelatin solution was made from first-class gelatin which was the best gelatin which we could find. A gelatin that was used in fact for making bacteriological culture tests. So it was free from any substances, and also I added 100 cc to this and then I added to that 50 cc of gelatin mixture, dissolved in saturated salt solution and took precaution to have that saturated, and then that makes 150 cc. I added 100 cc of the saturated solution of salt to which the sulphuric acid had been added. I

called your attention to the fact that I used saturated salt solution, and I also used sulphuric acid, both of these helped to precipitate the action, and give a more complete precipitation of the tannin. Then in addition to that, I made 250 cc—I added 50 grams of purified talc. This was shaken up for several minutes and allowed to subside when it was filtered off. Then I took 25 cc of this solution in 250 cc, 25 to 250 equals 1/10, the number I took, 100 cc of the coca preparation. In this then I took an exactly equivalent amount, having taken 25 cc which is 1/10 of the amount—I began with 10 cc of solution, and I took the same solution after I had added these various precipitates. I had then in that way precipitated the tannin according to the method given in Bulletin No. 107. And then I triturated this mixture after having added 750 cc of water, the same amount I had in the first case, and the 25 of sulphimegotate of soda solution in the second case—so I had precisely parallel solutions and made a reading. The number of cc used in this way will be represented by B. Then A means the larger reading which I got and the smaller reading which I got by B, when the tannin was excluded, giving me the reading B which represents the amount of the tannin in the 10 cc of the original substance taken, that is 1/10 of 500— or rather it is 10 cc to the 500 cc used.

Q. And the method you have given is put down in the bulletin as the official method to ascertain tannin in tea, is it not?

A. Yes, sir; tannin in tea.

Q. Do you know tannin in tea will react to the same agents as tannin in coca leaves?

A. I don't know it.

Q. Do you know that the salt in the sulphurous acid may precipitate or will precipitate other things?

A. I did not use sulphurous acid. I used sulphuric acid.

Q. Do you know whether it will precipitate other things besides the tannin?

A. I do not.

Q. Do you know if gelatin will precipitate the tannin in coca leaves?

A. It is commonly believed so.

Q. Do you know so?

A. It is the official method which has been used for the past ten or fifteen years at least.

Q. For tannin in tea?

A. Yes, sir.

Q. But not in coca leaves, Doctor?

A. I have no official method for determining that.

Q. How do you know gelatin will precipitate all the tannin in the coca leaves, or do you know?

A. I don't know.

Mr. Hirsch: Then you may come down.

Mr. Miller: Hold on.

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. In your opinion, state whether or not that is the proper method for precipitating the tannin and to ascertain that which is the coca?

A. I do not think that is the proper method.

(Witness excused.)

DR. H. C. FULLER,
recalled by the Government,, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Fuller, could you obtain the entire amount of caffeine from a substance containing caffeine by the use of animal charcoal such as you described in your examination in chief?

A. I could.

Mr. Sizer: That is exactly what the witness testified on original examination. He undertook to say there was .17 of one per cent. of caffeine—it is simply reaffirming and reiterating his former testimony.

The Court: Hardly that, I think, Mr. Sizer. The specific objection was pointed out by your witness to his method of animal charcoal. I think he may be allowed to explain why in his opinion that was correct. That question was not gone into.

BY MR. MILLER:

Q. I will ask you whether or not animal charcoal is the customary method of bringing organic substances from coloring matter?

A. It is.

Q. State whether or not you have had much or little experience in the working with and the use of coca and cola?

A. I have.

Q. Are you or not prepared to express an opinion as to the percentage of tannin in coca, and if so, tell us what it is.

A. I am.

Q. What would you say it is, Doctor?

A. I should say—

Mr. Sizer: Unless the witness has made some experiments himself along that line, his opinion is not admissible.

The Court: I understood the witness to say that from his experiments or experience as a chemist, he was prepared to express an opinion, and I understood him to indicate that his experience had qualified him.

Mr. Miller: I thought he qualified in that respect.

BY MR. MILLER,

Q. Please state, in your opinion, what is the percentage of tannin in coca and if there is any difference in the two varieties of coca, tell in which it predominates.

A. I think there is less in Truxillo than in the Huanuco.

Q. In your opinion, what percentage is there in both?

A. I never have made—

Mr. Sizer: That is not a matter of opinion, it is a question of amount, of a specific substance. That is a question of fact to be ascertained by actual examination or analysis.

The Court: Where the fact is the result of a chemical process, I think chemists are qualified to express an opinion, and you may cross-examine him as to his source of knowledge.

The Witness: I want to say that I have never made any determination of the tannins in these substances. It is simply my opinion from experiments made with solutions of the products.

BY MR. MILLER:

Q. Well, based on that, I ask what is your opinion as to the amount of tannin in these varieties?

A. Well, I should say there was about ten times as much tannin in cola than there is in coca—

Q. (Interrupting) I am not asking you about cola, now, but I am asking as to the two varieties of coca, the approximate percentage.

A. I can't give the exact percentage.

Q. I have not asked for that. I asked your opinion, if you have one, based on your experimentation and your observation and your work with these two varieties of coca.

The Court: Well—

Mr. Miller: I meant to ask from his experience and observation and his work, from seeing work done under his observation, he was prepared to express an opinion as to the percentage of tannin in the two varieties of coca.

The Court: If your observations with the working of these solutions has given you such information as a scientific man, and has given you experience with reasonable approximation to answer as a scientific man, give a scientific opinion, you may do so, but if it is from surmise on your part, you will not so state.

The Witness: I want you to understand that my own opinion that I am giving you is based on my work with the cola nut also.

Q. Well, base it on your experience with everything that has tannin in it, if you wish to.

A. I am of the opinion that there is about .2 of a per cent of tannin in the coca leaf. Now, possibly it it a little more in the Huanuco variety than in the Truxillo but whether the percentage would be very much augmented, I am not prepared to state how much.

Q. Can you state the amount of percentage of extracted matter that is found in Coca Cola syrup made from Merchandise No. 5 due to the use of Coca and Cola?

A. I can.

Q. How can you state that, Doctor?

A. I can state that because I have made analyses of Merchandise No. 5 to determine the total extractive matter. Knowing the total extractive matter that exists in California wine and assuming it was white California wine, which has been represented by the other side, I can determine how much came from the coca and how much from the cola and then by simply taking the preparation which Merchandise No. 5 was mixed with the Coca Cola syrup, it is a very simple matter to determine how much of the extractives from coca and cola would get into the Coca Cola syrup.

Q. Have you got a chart that would show that, that has been prepared by you as a basis, taking as a basis the analysis that was reported by Doctor Mallet containing the total extractive of 4.25 in one ounce of syrup and 3.42 in another and 3.85 in another?

A. Yes, sir; I have such a chart.

Q. Will you just show us how it has been worked and what was the percentage of cola and coca is relatively in the two.

A. Then—the extractive matter from coca and cola —

Q. (Interrupting.) You might explain that to the jury—the extractive matter in Merchandise No. 5.

A. The extractive matter in Merchandise No. 5.

Q. Interrupting.) Just keep that chair still please, Doctor.

A. All right—the extractive matter in Merchandise No. 5 was 4 per cent. Now there are 2 per cent due to wine that percentage has been worked out as the result of a large number of experiments on light California wine, and that would leave a balance of the extractive in that, the large amount, it would be due to the coca and cola. Now knowing the weight of a given volume of Merchandise No. 5, it is a very simple thing to figure out how much of that percentage, of that 2 per cent. would be due to coca and cola. Knowing that there are fifteen gallons of Merchandise No. 5 put into 1250 gallons of syrup, you of course can at once figure how much of this would be due to coca and cola in that 1250 gallons.

Q. What did you find that to be?

A. .0185 per cent., or one part in 5283.

Q. That represents the total coca and cola product in Coca Cola syrup?

A. That is the lightest amount possible.

Q. Are you familiar with the reaction and reactive agents employed by Drs. Mallet, Caspari and Sadtler as testified to by them as applied to the tannins in coca and cola?

A. I am.

Q. I will ask you to state whether or not you have made any experiments with those reactive agents on Merchandise No. 5 during the progress of this trial since the testimony of those three gentlemen or on coca and cola extracts to determine as to the amount and action and behavior of the tannins in these respective mixtures.

A. I worked on the extract of coca and of cola.

Q. What did you find with respect to the behavior of the tannins in coca and cola when the reactive agents as indicated by the three witnesses referred to were applied?

A. You mean how did each reagent act?

Q. Yes; how did the tannins behave, in other words?

A. They behaved exactly alike.

Q. Is it possible in your opinion to determine from the application of these reactive agents as to whether or not the tannin that is included in the mixture is exclusively that of cola or exclusively that of coca, or whether a mixture of both?

A. It is impossible.

Q. I will ask you to file that first chart which you exhibit there as exhibit No. 1 with your testimony and let it be so marked.

The Court: That may be filed, but I do not see any

necessity of a chart for such a simple statement.

Mr. Miller: It is rather intricate.

The Court: I do not see the intricacy, but without objection it can be filed. I see no necessity of a chart. A chart should be limited to a summation of figures that can only be understood in their relations one to the other by the chart and not for a simple statement of that kind.

Mr. Sizer: I move to exclude the chart, or, if it is not admitted, I object to its admission.

The Court: I sustain the objection.

Mr. Miller: Note an exception.

BY MR. MILLER,

Q. I will ask you to state whether or not you have prepared any tabulation of or made any computation showing the relative percentage of tannin as coming from coca that there would be in either Merchandise No. 5 or Coca Cola syrup, based on a statement of Dr. Schaefer as to the amount employed.

A. Yes, sir, I have.

Q. What was the result of your calculation in that behalf and what percentage did you compute of tannin?

A. omputed the tannin from cola on the basis of two and a quarter per cent. and on coca as .25 per cent. or one-fourth of a per cent.

Q. What is the result of your computation?

A. It would give .00011 per cent. of tannin to the coca in Coca Cola syrup, and .0004 per cent. due to the cola in Coca Cola syrup, assuming that it was all taken out of there.

Q. That would mean one part of coca tannin to how many parts of total mixture?

A. I think it is 850 some odd thousandths. I forget the exact figure.

Mr. Miller: I would like to have this chart filed.

A. One part in 853,000 of tannin due to coca and one part in 248,000 of tannin due to cola.

Mr. Sizer: I object to that; that is the same kind of a chart.

The Court: I think a chart that merely emphasies or fixes one portion of the testimony before the minds of the jury in black letters when it is not a matter that requires illustration by a chart and where graphic illustration does not aid, should not be permitted.

Mr. Miller: I ask that the witness be permitted to have that before him, he cannot carry those figures in his head.

The Court: Certainly not—he can use it to refresh his memory himself, but where a graphic illustration brings out the idea, that is another thing.

BY MR. MILLER:

Q. Now, I will ask you to state whether or not you have had occasion to test the Coca Cola syrup as compared with Merchandise No. 5 and likewise as compared with coca extract to ascertain whether or not there is any flavor imparted to the Coca Cola syrup by either Merchandise No. 5 or coca extract.

A. I have.

Q. Is there or not any odor or flavor imparted thereby?

A. There is not.

The Court: I want to say that I will make the same ruling about that chart, about the caffeine in tea and coffee; that will be removed from the blackboard.

BY MR. MILLER:

Q. Have you a sample of cola extract made up by you personally?

A. Coca or cola?

Q. Coca.

A. I have.

Q. Have you got it with you?

A. Yes, sir.

Q. I will ask you to produce it.—Was that prepared personally by you from the leaves of the coca?

A. It was.

Q. State—if you will kindly open that and pass it to the jury that they may make a test of the odor,—

Mr. Hirsch: Before he passes that to the jury we want to inquire how he made it.

Mr. Miller: I am quite willing that they should and in this connection I wish to state that the jug of Merchandise No. 5 was filed and before that is passed to the jury I wish to ask that that Merchandise No. 5 be passed along with that extract that the jury may smell both.

The Court: We will first find out where the coca extract comes from.

BY MR. MILLER:

Q. You say you made that yourself, tell us how you made it.

A. I made that from some carefully selected leaves. I have a sample of the leaves here. (Indicating.)

Mr. Sizer: We would like to have that bottle, to have the privilege of inspecting it.

BY MR. MILLER:

Q. It this the character of leaves from which that was made?

A. Yes, sir; some of the same leaves from which that was made. Those leaves were from a lot of coca leaves as they ordinarily occur on the American market. They were tested and found to contain cocaine, that they had anesthetic properties. The extract was made up with a solution of alcohol and water, exactly as the Pharmacopœia prescribes for making up fluid extracts of coca. It depends first on the removal of a large part of the extractive matter by a volume of solvent, not quite equal to the entire amount of finished product, and then a further extraction with this same solvent to exhaustion. Then evaporating the last portion and mixing it with the first portion it gives a preparation known as fluid extract of coca leaves.

Mr. Hirsch: Now, we object to that. He explains that it is fluid extract of coca leaves; it has nothing to do with the way Merchandise No. 5 is prepared and he does not give the amount of alcohol nor the solvent nor the method used. It may have cocaine in it and everything else in it; we do not know.

The Court: The objection is overruled.

BY MR. MILLER:

Q. What is the percentage of tannin in this mixture?

A. I do not know.

Q. Approximately what percentage?

Mr. Sizer: I object to that; he says he does not know.

The Court: I don't know whether he means literally that he does not know or that he does not know the exact percentage.

BY MR. MILLER:

Q. I mean the approximate percentage; I do not mean whether you tested it out yourself personally, but approximately the amount of tannin.

A. I do not know; I cannot give an opinion on that offhand.

Q. I will ask you whether or not you heard Doctor Schaefer's testimony as to the process which he employed for making Merchandise No. 5.

A. I did.

Q. State whether or not in your opinion the use of the hydrocarbon that he used which I understand to be toluol, would remove any of the tannin?

A. No.

Q. Would any other process through which he put that leaf, remove any tannin, and if so, what?

A. You mean before it was extracted with the wine?

Q. Before it became Merchandise No. 5.

A. No, sir.

Q. Would or not any of the flavoring matters be removed, and if so, how and why, before it went into Merchandise No. 5?

A. Yes, sir; they would all be removed.

Q. Now, in what process?

A. By the toluol and by the subsequent steaming process.

Q. How does the steaming serve to remove the flavoring matters and odors?

A. They are removed because they are volatile. That is the process used to remove the flavoring agents from a great many flowers, leaves and things.

Q. Why would this toluol remove any of them?

A. Because they are very soluble in oily mixtures of that kind.

Q. Now, I ask you what you know as to that jug of Merchandise No. 5 which was produced to Dr. Mallet, where you procured it and whether it is Merchandise No. 5.

A. I don't think I analyzed that particular jug.

Q. I will ask the Marshal to bring the jug of Merchandise No. 5 down here and ask you to state if it is Merchandise No. 5 and if you have had occasion to examine it since produced.

Mr. Sizer: He says he did not alalyze it.

Mr. Miller: This witness said he could detect it by the peculiar toluol odor.

Mr. Sizer: He did not say that.

The Court: He can tell whether it is Merchandise No. 5 or not. If he can, he can do so, and if he cannot, he can say so.

BY MR. MILLER:

Q. Did you or not work with Dr. Emery after the sample of this Merchandise No. 5 was taken from this jug by consent of parties last Saturday?

A. No, sir, I did not.

Q. Have you or not examined samples of Merchandise No. 5?

A. I have.

Q. State whether or not this particular extract of coca which you made up yourself resembles Merchandise No. 5 as to flavor or odor.

A. It does not.

Mr. Miller: I wish to offer this in evidence as Exhibit No. 1 with Dr. Fuller's re-examination.

(The exhibit was marked as requested. It is the bottle containing the fluid extract of coca that the witness has

been testifying about.)

BY MR. MILLER:

Q. Is there any difference in flavor between the coca tannin and the cola tannin as respects the gelatin or cinchonine?

A. There is not.

Q. Is there any difference in their behavior as respects the cinchonine sulphate?

A. No, sir.

Q. Is it possible in your opinion, speaking from your observations and experiments with Merchandise No. 5 and with the extracts of cola and of coca, should you mix the tannins of both coca and cola together to determine which is the more prominent in the mixture?

A. No, sir. It would not be possible.

Q. Tell why.

A. They both react alike, and simply because you get a dark color signifies nothing at all.

Q. Have you tried both of them?

A. Yes, sir.

Q. What kind of color do you get from the tannins?

A. You get a greenish black color.

Q. Which is the darker of the two, if either?

A. There is no difference if the concentration is the same.

Q. State whether or not you have applied to the tannins of both coca and cola the reactive agent and the reaction processes as described by Drs. Mallet and Caspari.

A. I have.

Q. To what do you attribute the reddish brown color spoken of by Dr. Caspari as indicative of the reaction of cola,—which I believe he said he ascribed it to.

A. I attribute it to the fact that he did not have any tannin there.

Q. Why so?

A. Because he said he worked with a decoction of cola obtained by boiling with water or boiling it up with water, and by doing that in the first place you precipitate the tannin with your starch that is in the cola and it would go through the filter, if you could get any through, and in my opinion you could get no filterate. I have performed the simple reaction and got through one or two cc's in the course of an afternoon, working with 100 cc. of boiling water to 10 cc. of cola, and that filturate gave a reaction very similar to what Dr. Caspari describes, but it is in no way comparable with a decoc-

tion made in a cold way, from cold water, which give a distinct green black color on treatment with iron chloride.

Q. In which way would you get the greater proportion of tannin, by boiling or having the cold infusion?

A. You can only get it with the cold infusion?

Q. Now, if the same weights of material be taken—that is, of cola and coca, in the investigation of the tannin content—I will ask you to state whether or not the results as to concentration would be any index as to the amounts of coca or cola tannins that were present, and if not, state why.

A. They would be an indication, yes.

Q. In what way,—which would give the greater?

A. The cola tannins would give the greater.

Q. Probably how much greater?

A. I should say ten times.

Q. Have you tried mixing Merchandise No. 5 with Coca Cola syrup to see whether or not any flavor is imparted to the syrup by the mixing of the Merchandise No. 5?

A. No, sir, I have not; not with Coca Cola syrup.

Q. I didn't mean Coca Cola syrup but syrup independent of the Merchandise No. 5 and then adding the Merchandise No. 5 to the simple syrup?

A. Yes, sir, I have.

Q. State whether or not there is any taste imparted to the mixture after the Merchandise No. 5 is added.

A. There is not.

Q. Did you receive from Howard Candler a statement as to the contents of this package of syrup that he made up by leaving out the Merchandise No. 5 that he shipped to Dr. Mallet from his factory as per his agreement on the witness stand?

A. I did.

Q. Assuming that one gallon of the mixture in which Merchandise No. 5 was not added was made up and that the mixture of Coca Cola syrup proper which contained Merchandise No. 5 was taken from a 1250-gallon batch, would there as to the flavoring oils or odors be a difference even in batches of that size, independent of the Merchandise No. 5, and if you say so, then tell why there would be—

A. There would be.

Q. Why do you say so?

A. In the first place one of these mixtures was 1250 times greater than the other, and it is a very difficult matter to adjust flavoring agents and especially flavoring agents of the extreme potency of the oils that are used in this mixture in a small batch exactly to duplicate the

test that you would get in a large mass. It is one of the most difficult things in pharamceutical chemistry to do that. The error of adjustment is increased many times in a small mixture over a large mixture. It is a very difficult thing in even five-gallon batches made up from the same formula to get exactly the same flavor. People can very often tell that. I have had that same experience myself. It is due to the essential oils.

Q. I will ask you to state from a scientific standpoint and a practical one, as well, whether or not the methods of Dr. Mallet and Dr. Caspari were proper methods for determining the tannin in Merchandise No. 5 and in Coca Cola syrup, and if not, state why.

A. Do you mean in getting them out for testing?

Q. I mean whether or not the tests mentioned by them were true scientific methods for determining the flavor.

A. No, sir.

Q. Tell why, and in that respect speak of Dr. Sadtler as well, for determining the flavor.

A. You mean the flavor of Coca Cola syrup?

Q. Yes, as compared with Merchandise No. 5?

A. No, sir, I do not consider them scientific.

Q. Tell why.

A. I think I answered that in the previous question, the difficulty of making up two batches, one a very large one and one a very small one, with the same ingredients and adjusting those oils so that you would get the same flavor. The scientific way of doing that would be to make up a batch with all those ingredients, leaving out the Merchandise No. 5, say five or ten gallons of it, and then divide that into two parts and to one of those parts add the requisite quantity of Merchandise No. 5, and see then if you could tell any difference.

Q. You say you have experimented in that way?

A. Yes, sir.

Q. Now, assuming that there was a slight difference in the predominance of the tannins of coca and cola in the Coca Cola syrup, or in Merchandise No. 5, would that slight difference or not impart any distinctive odor or flavor to the product?

A. It would not.

Q. After the odor from the toluol which you noticed first on opening a container of this Merchandise No. 5, is there any other distinctive odor present, and if so, what is it?

A. There is an aroma of wine, I should call it. That is about as distinct as I can describe it.

Q. Is there or not an odor or aroma of California

wine—that is, does it give off an odor or aroma, or are you acquainted with it?

A. I am not familiar with the odor of one wine over another.

Q. Are you acquainted with the aroma from the white California wine?

A. Not specifically.

Q. Or white wine in general, I should say?

A. No, sir.

Q. Did you endeavor to ascertain whether or not there was any theobromine contained in Merchandise No. 5, and if so, what did you find?

Mr. Hirsch: The doctor went into that and he told about the melting point of the theobromine and caffeine on direct examination and he said the melting point was different and we put the question if there was simply a trace of theobromine, could it be detected.

Mr. Miller: Do you concede that he said there was none?

Mr. Hirsch: Yes.

Mr. Miller: Then I won't ask him. I recall that he stated about the difference in the melting point but not as to the quantity.

CROSS-EXAMINATION,
BY. MR. HIRSCH:

Q. When did you make all these experiments,—since you have been here?

A. No, sir; not all of them.

Q. About the tannin?

A. Yes, sir.

Q. Did you ever know anything about tannins before you came here?

A. A little.

Q. Not much?

A. No, sir.

Q. You found all of your methods by listening to the claimant's testimony?

A. Yes, sir.

Q. Did you know anything about the tannins before you came down here?

A. Not much.

Q. How much?

A. I have endeavored to detect them in various pharmaceutical products I have analyzed but never gone into the chemistry of them much.

Q. Did you ever treat coca leaves and cola nuts before you came here?

A. No, sir.
Q. Had no experience?
A. No, sir.
Q. Suppose you take fifteen or twenty leaves and make an infusion of them, and use fifteen or twenty reagents to make a test and then put them together, could not you by a process of elimination tell which one of the tannins were present?
A. I do not think so.
Q. You could not do it?
A. I don't think anybody could.
Q. Could you do it?
A. No, sir.
Q. That is because you have had no experience?
A. That is one of the reasons.
Q. You said charcoal could extract all of the caffeine. Did it?
A. It did.
Q. Why do you differ with Dr. Emery as to your caffeine contents?
A. I do not.
Q. Didn't Dr. Emery report that he found a greater percentage of caffeine than you did?
The Court: I think the question of comparison in that way is not proper.

BY MR. HIRSCH:

Q. If there were two per cent. of tannins from the coca leaves, would it not be possible to identify it?
A. No, sir.
Q. Didn't you say you could identify the tannin from the coca leaves?
A. I did not.
Q. What did you say about two per cent. of tannin in coca leaves?
A. I do not think I made that statement.
Q. I mean .2.
A. You mean how I can identify that?
Q. Yes.
A. You cannot identify it?
Q. Then you do not know how much per cent.?
A. You mean an approximate per cent.?
Q. Yes.
A. That is different.
Q. How did you approximate it?
A. I made up infusions of coca and cola and I adjusted them until they gave the same reaction, and it took ten times as much—
Q. What did you adjust them with?

A. I adjusted the solution.
Q. What reagent did you use?
A. Iron chloride—you mean, adjusting for that test?
Q. Yes.
A. That is all; iron chloride.
Q. Have you ever used the five reagents recited by Drs. Mallet and Caspari?
A. I didn't hear but three.
Q. Three was all you used?
A. They used three for differentiating. They used ferricynide and ammonia, which is a general reagent with tannins, no more indicative of one than of another.
Q. Did you use all five on one thing? Don't talk about any one in particular, but five; and if you used those five, by a process of elimination could not you tell whether that tannin was derived from the coca leaf?
A. They didn't use five.
Q. Did you try that?
A. No, sir.
Q. Is it customary to use animal charcoal to purify caffeine quantitatively?
A. Yes, sir.
Q. What authority?
A. I use it.
Q. You mean, the Department of Agriculture uses it?
A. Yes, sir.
Q. And that is your authority,—the Department of Agriculture?
A. And what I do myself.
Q. Is it not a fact that animal charcoal will take up part of the caffeine?
A. It does not from the solution of chloroform.
Q. You had a chart showing the percentage. Will you let me see that?—You state that the extracttive matter in Merchandise No. 5 due to the coca leaf and cola nut—you said the coca and the cola equaled two per cent.?
A. Yes, sir.
Q. You say that would not impart a flavor?
A. No, sir.
Q. Did you detect any difference in the flavor of California wine and Merchandise No. 5?
A. I said I was not familiar with the flavor of California wine alone.
Q. Did you find any difference between the flavor of California wine and of Merchandise No. 5?
A. No, sir.
Q. Do you mean if I would put California wine before you and Merchandise No. 5 before you, there would be

no difference in the odor?

A. I do not know.

Q. Then you do not know whether you would detect any difference?

A. I said I did not know, that I had not tried either.

Q. Would or would not two per cent impart a flavor to Coca Cola syrup?

A. It would not.

Q. Did you ever try it?

A. There is no flavor in that.

Q. No flavor at all?

A. No flavor in that two per cent.

Q. And no odor?

A. No, sir.

Q. How do you know there is no flavoring matter and no odor?

A. There is no flavor or odor of coca leaf in Merchandise No. 5.

Q. What is it that gives the vanilla extract its flavor?

A. Vanillin.

Q. Is that all?

A. All I can think of just now.

Q. What is the per cent. of vanillin in vanilla extract?

A. I do not know.

Q. Is it not one part in two thousand?

A. I do not know.

Q. What would be the proportion of vanillin in vanilla ice cream?

A. I do not know.

Q. Do you know whether it would be one part in 250,000?

A. I have not the slightest idea.

Q. You don't know anything about that? All you know is these experiments you performed down there?

A. That is all.

Q. I want to find out how you got this two per cent. exactly of coca leaves and cola nuts in Merchandise No. 5?

A. I took Merchandise No. 5 and determined the total extractive matter that was in there which was four per cent. Now, the average of a large number of analyses of white California wine gives two per cent.

Q. You don't know that,—you are taking somebody else's word?

A. I am taking the results of analyses made and published.

Q. What publication do you refer to?

A. I refer to something gotten out by our Bureau.

Q. Did you ever notice what Leach says about per-

centage?

A. I don't know. I think that is pretty close to it.

Q. Does he say two per cent.?

A. I couldn't say.

Q. Go on and tell me where you got that two per cent.

A. I simply subtracted two from four and that left two.

Q. That is assuming that the California wine used had two per cent. of extractive matter?

A. Yes, sir.

Q. And that is about the highest percentage you found?

A. I don't think so.

Q. Doesn't Leach give much less percentage?

A. I don't know.

Q. When did you first find out that toluol was used in the manufacture of No. 5?

A. When Dr. Schaefer told me.

Q. You didn't know before that?

A. No, sir.

Q. You state on the witness stand that Dr. Kebler did not tell you toluol was used in Merchandise No. 5?

A. No, sir; he told me he did not know whether it was used.

Q. He told you he did not know that?

A. Yes, sir.

Mr. Hirsch: That is all, then.

REDIRECT EXAMINATION,
BY MR. MILLER:

Q. Had your examination in chief been given and you testified formerly in this case before you heard Doctor Schaefer's statement that he used toluol?

A. What is that?

Q. You testified in chief in this case before Dr. Schaefer ever told you he used toluol in this mixture?

A. Yes, sir.

Q. Is tannin a flavoring agent?

A. No, sir; it is not.

Q. When you speak about having had no experience as to tannins or working with tannins I will ask you to state whether or not you mean actual experiments for determining tannin contents or whether you mean that you have had or have not had workings with leaves that had tannin in them. Tell what you mean when you made that statement to counsel.

A. I had reference, first, to the fact that I had never made any determination of them, and then that I had

never made any extensive experiments with their different reactions. Of course, I worked with leaves that had tannin in them.

Q. How many years?

A. Off and on for ten years, I guess.

Q. What two reagents, or what two agents, were there that Drs. Mallet and Caspari used that you say are common to all tannins as re-agents?

A. The iron chloride and the ferricyanide of potassium, and ammonia.

Q. What are two that are common? These three were applied to those distinctive tests, but what were the two that were common, or did I misunderstood you? Did you say there were three that were common and two uncommon?

A. I think I stated that the iron chloride and the gelatin and the cinchonine sulphate tests were common to both cola and coca, and I think I further stated that the ferricyanide of potassium and ammonia tests were given by tannins generally.

Q. Now, at the same time you sent that Coca Cola syrup to Dr. Boos who has testified, did you send any coffee or coffee extract, and if so, tell what.

Mr. Hirsch: The testimony is that Dr. Fuller did not send that; it was another gentleman.

Mr. Miller: I am asking him.

Mr. Sizer: I do not see that that is testimony in rebuttal.

Mr. Miller: It is in rebuttal to Dr. Schmiedeberg. I cannot ask Dr. Boos about it until I show what he got, and this is in rebuttal of Dr. Schmiedeberg on that point.

The Court: What point?

Mr. Miller: On the point of the coffee and tea being more harmful than Coca Cola.

The Court: What is the question about that?

Mr. Miller: Dr. Boos performed some experiment with coffee and Coca Cola syrup but his testimony was ruled out on the ground that he did not identify a certain coffee mixture or what we say was coffee, that was sent to him.

The Court: I don't recall any such thing as that.

Mr. Miller: I may be mistaken in saying it was ruled out, but before I ask him I want to show that the coffee was sent to him, and if this witness tested it I want him to show what it was and I want to ask Dr. Boos after I have laid that foundation, as to the relative toxicity of the two.

Mr. Sizer: That is matter in chief. Witness after wit-

ness testified on original examination as to the effects of coffee and tea and Coca Cola, and the effect of caffeine in each of them and Dr. Boos testified fully.

The Court: The Government did not go into the question of coffee and tea. You cross-examined on that.

Mr. Miller: And this is in rebuttal of Doctor Schmiedeberg.

The Court: I do not think it is a question as to it being more or less harmful or as to it being more or less harmless. If you want to rebut the fact that caffeine in coffee and tea is injurious, you may do so, but not as to the relative injury or benefit.

Mr. Miller: What I wanted to show was that Dr. Boos performed certain experiments and I want to show what he got.

The Court: You can show that.

BY MR. MILLER:

Q. State whether or not you sent any coffee or coffee extract or caused them to be sent to Dr. Boos and if so state what it was.

A. I made up an infusion of coffee for Dr. Boos, containing one grain of caffeine to the fluid ounce and sent it to him.

Q. About what time with respect to the time that the Coca Cola syrup was sent you—or I will ask you to state whether or not you sent it under your own seal?

A. Yes, sir.

RE-CROSS EXAMINATION,
BY MR. HIRSCH:

Q. Assuming now that in the making up of Merchandise No. 5 that 380 pounds of coca leaves and 125 pounds of cola nuts, were used, to-wit 505 pounds, what percentage of the joint weight of the coca leaves and the cola nuts would be in Merchandise No. 5 according to the process used by Dr. Schaefer according to the figures you gave here this morning?

A. I can't figure that out in my head.

Q. Well, you can take a piece of paper and pencil and do it.

A. All right. But I think I have given that, have not. You say what per cent of these two would be in Merchandise No. 5?

Q. From the coca and cola.

A. I think I said two per cent, didn't I?

Q. Well?

A. I don't know whether I did or not. If I said two

per cent—I want to know what I did say.

The Court: It is not a question as to how much there was of the tannin or extractive matter, but how much of the original coca and cola in weight?

The Witness: Well, I understand.

The Court: The witness may make this calculation and later come back on the stand. Dr. Schaefer testified to that and it has not been disputed, and until there is some dispute about that, I don't see the force of the evidence. It would be a matter of accumulation—you can make your figures. If there is any error, it is obvious. You can make those calculations and report back on the stand. Is there any further examination of this witness.

Mr. Hirsch: No.

The Witness: All right, I will do so.

(Witness excused.)

DR. W. F. BOOS,

recalled by the government in rebuttal, testified as follows:

RE-DIRECT EXAMINATION,

BY MR. MILLER:

Q. You may state whether or not you received a coffee preparation that was prepared by Doctor Fuller, and whether or not it was under his seal?

A. Yes, sir; I did.

Q. Did you perform any experiments with that and with Coca Cola syrup at the same time, and if so, what was the result of each?

A. I did. I gave the equilalent amount of Coca Cola syrup and of coffee to frogs to determine their relative toxicity, using of course, always the same amount of the two solutions of the same strength, so that I could use the same amount of each solution. I found by the two—

Mr. Sizer: I object to that—that is testimony in chief. It is testimony to show whether it contains anything of a deleterious character, and that has been gone over.

The Court: I will exclude the question of relative toxicity. You have already gone into the Coca Cola and that part of the proof is in chief, but you may show the experiments as to the toxicity of the coffee.

BY MR. MILLER:

Q. State what amount of coffee was given to a frog and how it was administered and what was the effect.

A. I administered coffee into the anterior lymph sac and it was necessary frogs from .16 to .17 of a milligram

per gram of weight of the frog in order to produce death. Mr. Sizer asked me to give —

Mr. Sizer: Hold on. You needn't state anything about that.

BY MR. MILLER:

Q. We will ask you to give it in figures.

A. I was just going to give it to the average frog.

Mr. Sizer: Well?

The Witness: The average frog weighs 30 grams that would make the toxic dose of the coffee extract, it makes the average toxic dose 1/11 of a grain for a frog.

Q. 1/11 of a grain?

A. 1/10 of a grain on an average.

Mr. Sizer: Your Honor excluded this evidence based on the introduction of cola or caffeine or anything else into the circulation.

The Court: Both sides went into that.

The Witness: It was not put into the circulation.

Mr. Sizer: We went into it for a while but as soon as it developed that the effect would be different —

The Court: The only thing I recall excluding was direct application of caffeine to the muscles, that is the only thing I excluded.

BY MR. MILLER:

Q. When the frogs received the coffee in this way, was it is not injected into the circulation, and if not, tell where it was received.

A. It was not injected into the circulation. It was given in the anterior lymph sac.

Q. And how did it reach the circulation?

A. By absorbtion through the tissues.

Q. Now then, Doctor, I ask you whether or not there is any difference in the appearance between morphine and caffeine?

A. There is none.

Q. I pass you three containers which I will ask you to make Exhibits 1, 2 and 3 to your deposition, and state whether or not they all bear the same visual appearance to you.

Mr. Sizer: The same question was asked him on yesterday.

Mr. Miller: I asked Doctor Kebler that.

The Court: I don't think Doctor Boos was asked this question.

Mr. Hirsch: I think the records will show that he was.

The Witness: I was asked the question but not shown the exhibits.

BY MR. MILLER:

Q. Examine these samples and state if you can tell whether there is any difference between the three.

Mr. Sizer: He testified there was no difference in the appearance of them. He testified that. You are just asking him again about that.

The Court: He has just simply produced these and asked if they are samples without asking that the matter be gone over again. Just let him state if he identifies them.

BY MR. MILLER:

Q. Are you able to identify either of these as caffeine, morphine or sulphate of quinine?

A. No, sir; I am not.

Mr. Miller: We would like to offer these three samples in evidence as Exhibits 1, 2 and 3 to this witness's deposition. I expect to show what they are.

The Court: You may show it.

Mr. Hirsch: I suppose this evidence is produced to rebut the evidence of Mr. Chandler.

Mr. Miller: Yes.

Mr. Hirsch: Doctor Chandler did not say anything about the coffee and morphine being ground up—he said you could tell them from the crystals — this is ground up and powdered.

The Witness: It is crystallized.

The Court: I don't recall, but before we go any further, get Dr. Chandler's evidence and look at it. Is this what is called the crystalline form?

The Witness: Yes.

The Court: Well, just wait and put the witness on the stand and testify what it is and get Dr. Chandler's evidence you want to rebut, and I will rule on it.

Mr. Miller: That is all we care to ask him. I understand this is like it comes from the original containers and I understand it has not been ground.

The Court: You may put the witness on who knows what they are, before you do that, I will ask for you to let me have the exact statements from Dr. Chandler's desposition. Is there any further examination of this witness?

Mr. Miller: No, none.

RECROSS-EXAMINATION,
BY MR. SIZER:

Q. Doctor, did you analyze this sample of coffee extract that you got from Dr. Fuller to see exactly what it had in it?

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A. I determined the caffeine contents only.
Q. Were there any empyreumatic oil in it?
A. I have no doubt it was in it.
Q. Did you find any?
A. I did not look for it.
Q. How did you determine the caffeine contents?
A. I used the standard method, I do not recall at this moment the method, it was given in Autenreith.
Q. You don't remember anything about the details of that?
A. No, sir.
Q. When was that?
A. Last October, I think.
Q. Could you say whether or not there were anything else in the extract besides the caffeine, you don't know, do you?
A. Well, undoubtedly from looking at the substance, it had the odor of coffee.
Q. Well, you don't know what else there was in it besides caffeine?
A. Well, it was coffee—it had that appearance, it probably had all the other constituents of coffee.
Q. Well, I didn't ask you anything about probably. Did you determine it or do anything else besides determine the caffeine?
A. I could tell to this extent, it had the odor of coffee and had the appearance of coffee—it was a dark infusion.
Q. Well, you have stated that; but you didn't undertake to determine what the other constituents besides caffeine were?
A. No, sir, I did not.
Q. Now you say you injected it into the lymph sac of the frog?
A. Yes, sir.
Q. Is it a fact that is a part of the circulation?
A. No, sir.
Q. Isn't it a fact that a substance injected into the lymph sac will have a more powerful effect and will be more readily observable than taken into the stomach?
A. Yes, sir; but it is not a part of the circulation.

RE-DIRECT EXAMINATION,

BY MR. MILLER:

Q. Would it have any different effect ultimately upon the brain or the heart or spinal cord?
A. None whatsoever.

RE-CROSS EXAMINATION,
BY MR. SIZER,

Q. Are you familiar with the German Work entitled "Frohner Toxicology Fur Thierartze" the first volume.

A. May I see the book? I can't tell without seeing it. I did not follow the spelling.

Q. Yes, you may look at it.

A. No, sir; I am not familiar with this book.

Q. Do you know whether it is a standard authority or work or not?

A. I could not say because I am not familiar with it. It is a book for veterinary surgeons.

(Witness excused.)

DR. H. C. FULLER,

recalled in rebuttal by the Government, testified as follows:

RE-CROSS EXAMINATION,
BY MR. HIRSCH:

The Witness: I will answer now by saying 29 per cent.

Q. Did you make that calculation or did Dr. Kebler make it?

A. I made it.

BY MR. MILLER:

Q. That is 29 per cent. of what?

A. 29 per cent. of coca leaf and cola nut that is used in making the mixture that Dr. Schaefer makes.

Q. That is Dr. Schaefer's preparation?

A. Yes, sir; in making Merchandise No. 5.

(Witness excused.)

DR. W. O. EMORY,

recalled in rebuttal by the Government, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Doctor Emory, I will get you to state whether or not you took any of the contents of the jug which was put in evidence as containing Merchandise No. 5, and made any experiments therewith, and if so, tell what experiments you conducted.

A. I endeavored to extract the tannin by using substantially the reaction described by the defense.

Q. And by that you mean by what Doctors?

A. Dr. Mallet, Dr. Caspari, and also, well —

Q. Also Doctor Sadtler?

A. I could not say about Dr. Sadtler.

Q. Well, applying these methods, what did you find?

A. I found these combined tannins gave with gelatin

no precipitate; but ferric chloride a dark green coloration; and cinchonine sulphate a flocculent white precipitate.

Q. Could you or not by applying the processes that were applied by Dr. Caspari or Mallet determine which, if either of the tannins, was predominent in the mixture?

A. It is an impossiblity.

Q. Is or not tannin a flavoring extract and ever used as such?

A. It is an astringent.

Q. Is it a flavoring agent.

A. It would impart some flavoring perhaps.

Q. It is an astringent—it is the astringent property imparted to Coca Cola syrup after it is mixed in the proportions that Mr. Howard Candler gave?

A. I never tasted Coca Cola syrup but once and then I only recognized a flavor which I considered peculiar to essential oils and lime juice, and also phosphoric acid.

Q. Can you state what characteristic odor or odors Merchandise No. 5 possesses?

A. I have had only occasion to examine two containers. When the cork was first removed, the odor of toluol—crude benzine, was predominent, and practically the only aromatic principle one could detect. Afterwards, that became dissipated and the pungent characteristic odor of the wine became very apparent.

Q. Could you state whether or not you were able to distinguish any of the odors characteristic of the coca or cola in this sample of Merchandise No. 5 or these samples?

A. No, sir.

Q. And did you hear the testimony of Dr. Wesener as to his method of determining the caffeine content of the syrup mixture of Coca Cola syrup sent to him?

A. Yes, I did.

Q. State whether or not in your opinion from a scientific standpoint, that was open to any criticism or was an improper method, and if not, why not.

A. I would say it would be an impossibility to obtain pure caffeine by the method described by him.

Q. And why not?

A. Assuming he gave all the details, it would be absolutely impossible.

Q. I am asking you to state why, in a general way?

A. Because the chloroform extract first obtained is not in any way a pure form of caffeine—accompanying the caffeine is always found coloring matters, aromatic principles, like essential oils, traces of phosphates, and a trace of sugar. The chloroform residue obtained is always a

crystalline magma colored yellow.

Q. Have you examined to ascertain whether there is any difference between the appearance of morphine and caffeine, either in the crystallized forms or otherwise after it is ground up?

A. Well, I have seen samples so treated that there is practically no difference in the physical appearance of such samples.

Q. You mean to the naked eye?

A. No, sir; there is not.

RE-CROSS EXAMINATION,
BY MR. SIZER:

Q. Doctor, there is a difference in the appearance of crystals of caffeine and morphine before they are broken up, is there not?

A. That would depend largely upon the size of the crystals and the slowness with which they were allowed to form.

Q. There is a difference that can be detected between the crystals of caffeine and morphine?

A. You could not put that down as a rule. It would depend, as I say, on the size of them—if you could obtain large caffeine crystals which possibly could be recognized by an expert who had experimented with the substance a great number of times, but he could not swear it was caffeine.

Q. Well, if it was recognized as caffeine, he could swear it was caffeine?

A. I say it would be hazardous.

Q. You say there is a difference which experts can recognize, if he should see caffeine crystals?

A. Yes, sir; he would know it in his own mind.

Q. And if he recognized it in his own mind, he would be able to testify whether it was caffeine or morphine—

The Court: (Interrupting.) That is a matter of argument.

BY MR. SIZER:

Q. You say you performed some experiments in an endeavor to extract tannin from coca leaf and cola nut?

A. Yes, sir.

Q. Where were those performed?

A. Here in Chattanooga.

Q. Had you ever performed any similar experiments with coca leaves and cola nuts?

A. No, sir; not on these particular samples.

Q. On any coca leaves and cola nuts?

A. Not on these particular drugs, I should have said.

Q. Was that the only work you have ever done on coca leaves and cola nuts in endeavoring to get the tannins out of them, that has been here since this trial came on?

A. Yes, sir.

Q. Did you ever endeavor to get any other extracts out of the coca leaf and cola nut besides the tannin?

A. I tried to eliminate the cocaine which I did.

Q. Did you try to get any of the other extracts out besides the tannin or determine the amount of the other extractives?

A. No, sir; I isolated the tannin by the use of acetic ether, and the other combined extracts.

Q. But you did not undertake to determine the proportion of the other extractive matter?

A. No, I should say that would be an impossiblity to accurately do that.

Q. Well, a green persimmon has a very distinctive and perceptible flavor?

A. Yes, sir.

Q. And that is due to the tannin?

A. Yes, sir.

Q. You say you detected the flavor of phosphoric acid in Merchandise No. 5?

A. I detected the taste of it.

Q. What do you say about the phosphoric acid?

A. That was referrable to the Coca Cola —

Q. In Merchandise No. 5, what do you say about it?

A. I could taste it.

Q. Is there any distinguishing taste to phosphoric acid that you could recognize in Coca Cola syrup?

A. Not unless you know it. I happened to know it was present.

Q. You happened to know phosphoric acid was in it from the analyses?

A. Yes, sir.

Q. It has no flavor?

A. Except acidity taste.

Q. That might have been due to any kind of acid?

A. It was also due in part to citrate acid from the lime juice.

Q. The odor of Merchandise No. 5 is identical with the odor of California wine, isn't it?

A. That is the predominant odor.

Q. Do you mean to say, Doctor, there is any difference between the odor of Merchandise No. 5 or California wine?

A. There is certainly a difference.

Q. There is a difference?

A. Yes, sir.

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Is there any known method for determining exactly the tannin content except the one as described by Mr. Chestnutt this morning on the stand?

A. I know of no method of accurately, in the present state of the art, to practically determine the tannins in any substance.

Q. In your opinion, was or not the process followed by him the proper one for the purpose of determining the percentages of tannin contents?

A. It is the only method he could have employed with our present knowledge.

RE-CROSS EXAMINATION,
BY MR. SIZER:

Q. Doctor, but even that method was not accurate, was it?

A. I said the method was open to criticism which is recognized by all chemists.

Q. Still you say it is true there is no known method for determining definitely the amount of tannin?

A. Accurately.

Q. Well, what I mean is accurately determining it, that is true?

A. Yes, sir; with absolute accuracy.

Q. Now, that method would not be accurate at all in the case of tannin that did not precipitate with gelatin?

A. It might and it might not.

Q. It might not be?

A. Yes, sir.

(Witness excused.)

THEODORE BASCHE,
the next witness called on behalf of the Government, of lawful age, first duly sworn, testified as follows:

DIRECT EXAMINATION,
BY MR. MILLER:

Q. Mr. Basche, where do you reside?

A. Savannah, Georgia.

Q. Just take your seat there. I will get you to state whether or not about the time of the Coca Cola Company against Rucker was pending in the United States Court at Atlanta, you had occasion to obtain any samples of Coca Cola syrup which were analyzed by Doctor Cramp-

ton of Washington, of the Burea of Chemistry, and if you say you did, tell under what circumstances you received those samples and how you transmitted them, whether or not under seal.

Mr. Hirsch: We are perfectly willing to have him testify as to what he knows but whether Doctor Crampton analyzed them or not, that is another question.

The Court: He may state what he did with reference to the samples.

The Witness: I received an order from the Revenue Agent at that time, Mr. Gates —

The Court: You need not go into that.

The Witness: To get him some samples of Coca Cola and I went down to the Coca Cola place on Edgewood avenue and told a young man on the inside that I wanted to get a gallon—I got two large bottles about that size (indicating). He filled them up for me and I paid them for it and walked out with them and went to my office and I sealed them up and put them in a case.

Q. What kind of a seal did you put on them?

A. I disremember whether I used the wax seal with the Collector of Internal Revenue's name on it, or whether I used a paper seal and wrote over it with my name on it, so when it was broken they would know it, and I then marked these "Collector of Internal Revenue, Washington, D. C., Laboratory," and I took them to the express office and shipped them with the seals intact. Doctor Crampton told me the seals were intact.

Mr. Sizer: I object to that.

The Court: Yes, the objection is sustained.

BY MR. MILLER:

Q. I asked you whether you put your seals on it and whether they were intact when they left you?

A. Yes, sir.

Q. Did you or not deposit the same in the express office?

A. Yes, sir; I carried them to the express office.

Q. When was that with respect to the date of this suit of the Coca Cola Company against Rucker that was pending in the United States Court at Atlanta?

A. Between the time of the bringing of the suit and the first trial.

Q. I will get you to state if you know Dr. Crampton.

A. Sir?

Q. Do you know Doctor Crampton?

A. I met him in that trial. He came to our office there.

Q. I will get you to state if you have a publication

circulated by the Coca Cola Company entitled "Coca Cola News?"

A. I got it.

Q. I will get you to refer to page one of that publication containing directions to soda water dispensers and read the instructions that are given to dispensers. I will first pass it to adversary counsel that they may see it.

Mr. Hirsch: We object to this on the ground that it was published by Seth Cowl & Sons, 81 High street, Boston, Massachusetts.

Mr. Miller: I am not asking about who printed it but asked if it was circulated by the Coca Cola Company.

The Court: Does the witness know it was circulated by the Coca Cola Company?

Mr. Miller: I am asking him to say whether it was or not.

The Court: Do you know who circulated it?

The Witness: This was offered in the trial of The Coca Cola Company against H. A. Rucker and offered in evidence at that time and proven, admitted and proven —

The Court: That is not the question. The question is whether you know this is a publication circulated by the Coca Cola Company.

The Witness: No, sir; I do not know.

The Court: The objection is sustained.

Mr. Miller: We offer it in evidence, anyway.

The Court: That appears to be proof in chief, anyhow.

Mr. Sizer: I did not know what point they were offering it on.

Mr. Miller: The point is just this, that some of their witnesses brought out the fact that dispensers were given certain instructions. I did not think it was material but that evidence was admitted. We are trying to show they gave no such instructions and that here are the instructions contained on this pamphlet.

Mr. Sizer: This publication was issued in 1898, eleven years before the seizure in this case, and in Boston at that.

The Court: I have excluded it.

Mr. Miller: I have a similar publication which we will offer, dated January, 1901, containing a history of Coca Cola, and I will ask the witness whether or not this publication was circulated by the Coca Cola Company or by the defendant of Coca Cola where Coca Cola was sold throughout the South.

Mr. Sizer: Let me see it.

Mr. Miller: All right.

BY MR. MILLER:

Q. What do you know on that point?

A. All I know is that it was picked up as an advertisement.

Q. Picked up as an advertisement?

A. Yes, sir.

Mr. Miller: I submit that is a circumstance to go to the jury.

The Court: I don't know—let me see it.

Mr. Sizer: I don't think there is anything in it, it just encumbers this record and it seems that it is evidence in chief and then the witness has not shown that it was circulated by the Coca Cola Company. I have not had time to read it. I don't know that I have any serious objections to its going in.

Mr. Miller: If you don't, I would like to have it go in.

Mr. Sizer: I object to anything going into the record that does not belong there.

Mr. Miller: Then I understand you do object to it.

The Court: Gentlemen, the record is long enough without this colloquy. There is nothing whatever on this to show by whom it was circulated and if this witness does not know, I exclude it.

Mr. Miller: That is all for this witness.

Mr. Sizer: We do not care to cross-examine.

CROSS-EXAMINATION WAIVED.

Mr. Miller: We submit, now, your Honor, that we are entitled to read the testimony of Dr. Crampton on the statements that I was trying to draw out there so that we could show that these particular samples were sent to him for anaylses.

The Court: What did Dr. Crampton say especially about these samples he received—just read that.

Mr. Sizer: He said he got these samples from Atlanta. As I understand it, the Doctor testified in his examination as to the analyses he made of three samples, he did not distinguish between one and the other, and it was understood that if the Government connected it up, that all three of the samples would go in.

Mr. Miller: That is all I am asking for.

The Court: My recollection is that this connects it up. I therefore admit that portion of Dr. Crampton's testimony as to the other two samples.

(Witness excused.)

DR. L. F. KEBLER,
recalled to the stand for further examination, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Dr. Kebler, when you approached Dr. Hare with respect to his testifying for the Government, state whether or not he was retained by the Coca Cola Company?

A. Well, I did not approach Dr. Hare with view of getting him or retaining him for the Government. I was advised that Dr. Hare was retained —

Mr. Sizer: We object to that.

The Court: The objection is sustained.

BY MR. MILLER:

Q. What I wish for you to state, Doctor, is whether or not when you had your first conversation with Dr. Hare, he advised you that he was retained by the Coca Cola Company.

A. He did.

D. Did you testify on yesterday as to the difference between morphine and caffeine?

A. No, sir.

Q. I will ask you to state whether or not from your observation and experience you can distinguish between morphine and caffeine and sulphate of quinine in the crystallized form.

A. Not from the physical appearance, —no, sir.

Q. Speaking from your general observations and experience state whether or not the methods adopted by Mr. Chestnutt determining tannic acid or tannin content of coca was a practical and proper one.

A. It is. I have used the method to a considerable extent, not only with that but with other products as well.

Q. Have you or not had much or little experience in matters of that kind?

A. I have made considerable number of determinations of tannin material.

RE-CROSS EXAMINATION,
BY MR. SIZER:

Q. Is it or not recognized that there is no method known of determining accurately the quantity of tannin?

A. Well, it is a well-known fact that the tannin can be determined approximately, not with absolute accuracy.

Q. Will gelatin precipitate any kind of tannin?

A. Yes, sir.

Q. Well, sometimes it will not precipitate it, is that not true?

A. It is so recorded in literature but I have never found any.

Q. Do you know whether or not it will precipitate tannin in coca leaves?

A. I have not experimented on that point. Tannin is as a rule precipitated with gelatin unless it is very dilute, and in very dilute solutions gelatin does not precipitate some tannins.

Q. Will gelatin precipitate tannin from catigin?

A. I am not sure about that point.

Q. Doctor, do you know Dr. H. C. Wood who testified as a witness in this case?

A. Yes, sir.

Q. Well, didn't you approach him and try to employ him on the part of the Government?

Mr. Miller: I object to that.

The Court: The objection is sustained.

Mr. Sizer: He asked him about Dr. Hare.

The Court: You asked that question of Dr. Hare.

Mr. Miller: We desire to have the jury either taste or smell the contents of this keg of Coca Cola mixture which is present, the jug of Merchandise No. 5 and the the coca extract, and we submit that we are warranted from the ruling of the Court. While it is a matter in the discretion of the Court, I think the weight of authority is that we have that right where the test is as simple as that to resort to experiments, and we have all three of the mixtures present in court.

Mr. Sizer: That is the Coca Cola syrup, the Merchandise No. 5, —and what else?

Mr. Miller: And the coca extract.

Mr. Sizer: We have no objection.

The Court: Without objection that may be done.

Mr. Miller: We had better have two glasses; two other glasses, I should say.

Mr. Sizer: If they are going to hand the syrup around I suggest that it be diluted in the proper proportion, six or seven to one,—they might not want to drink it.

Mr. Hirsch: Dr. Fuller suggests that they ought not to drink it.

The Court: Don't anybody drink any of it; it is merely for smelling. The extract of coca contains some cocaine, which is not involved in this case.

Mr. Miller: I guess it is conceded cocaine is not a flavor.

The Court: I do not know. Have you passed the Coca

Cola syrup around?

The Marshal: We have to wait until we get a hatchet.

Mr. Miller: While that is being done I will offer certain correspondence between Drs. Caspari and Mallet with respect to this coca and to the detection of tannin which has not been presented. I would like to ask again if that correspondence can be furnished.

Mr. Sizer: I do not recall that anything of that kind has been called for. I do not recollect it.

The Court: I think it was called for and it was stated that it would be furnished.

Mr. Hirsch: I think the situation of that is that he called for it from Dr. Caspari and Dr. Caspari was uncertain as to how he got the method for determining the tannin and he finally said he thought it came through me.

The Court: Well, just look at the record and see just what it is.

Mr. Hirsch: Dr. Caspari states he has the typewritten slip I sent him.

The Court: I will not undertake to rule on that record until I get the record—if counsel wants me to rule as to the necessity for producing anything you must give me the place in the record where it was asked for.

Mr. Sizer: Here is a question that was asked Dr. Caspari, this is on page 1447: (Reading:)

"BY MR. MILLER:

"Did you receive any letter or letters in connection with the transmission?

"A. Yes, sir.

"Q. Have you any of those?

"A. I have not them with me. I have them at the hotel.

"Q. Would you produce them to counsel? I do not want to have them filed unless I find something in them that is relevant to the case.

"A. Yes, sir."

Doctor Caspari says they are still at the hotel; we will get them.

Mr. Miller: I wish the correspondence between him and Dr. Mallet. — (Addressing the Marshal:) Just draw an ounce of the Coca Cola syrup until I ask further questions and have it passed to the jury.

Now, a moment ago it was suggested by adverse counsel and we are quite willing that this be diluted according to the usual form of serving it and that I take it would not materially vary whether you use carbonated

water or not, or other water.

Mr. Hirsch: It would just be a difference in the taste.

Mr. Miller: I am willing to send some of it to the store and have it diluted by one of the chemists.

Mr. Sizer: Just pass it around and let them taste it.

The Court: This is the Coca Cola syrup?

Mr. Miller: Yes.

Mr. Hirsch: Just settle up the matter about Doctor Caspari. That letter Dr. Caspari promised to furnish to Mr. Miller; we have the testimony here on page 1453 and I will just read it to your Honor: (Reading:)

"Q. Where were your and Dr. Mallet's conferences held with respect to these analyses?

"A. They were carried on by correspondence.

"Q. Have you that correspondence?

"A. I have not.

"Did you not retain it?

"A. I have some of it but not all of it. As I remember it, the correspondence in connection with this tannin-like substance, in the first place —

"Q. I don't want you to state the contents.

"A. No, I am not. But I want to tell you how it came to be through correspondence and through what channels. I think Dr. Mallet sent Mr. Hirsch a memorandum of these tests and they were sent out by Mr. Hirsch to their chemists who were working on this problem.

"Q. And you got one of those?

"A. I got one of those memorandums.

"Q. And so that if you had never heard of Dr. Mallet's experimentation on Dr. Schaefer's you would not have known how to go about this?

"A. That does not follow at all. If I hadn't had the method that Dr. Mallet worked on I would probably have looked it up as he did and gotten the same one."

Mr. Sizer: Now, he is not asked to produce anything there.

The Court: Well, if you have any matter that you desire to refer to, just call it to my attention.

Mr. Miller: No—if he has that correspondence, I understand from counsel that they are willing to let us have it.

The Court: That does not call for anything.

Mr. Hirsch: We are willing to give it to them.

The Court: All right, then; give it all to them.

Mr. Miller: Doctor Caspari says he has nothing from

Dr. Mallet and I think that is true and may go into the record.

The Court: It is agreed that Dr. Caspari has stated to counsel in the presence of the court that he has no correspondence from Dr. Mallet and that is accepted as a statement from Dr. Caspari and goes into the record.

Mr. Sizer: We do not wish to leave the impression that Dr. Caspari did not get the memorandum from Mr. Hirsch that he testified to in his testimony here. He got an opinion from Dr. Mallet and got a memorandum from Mr. Hirsch.

The Court: He stated that.

(Witness excused.)

DR. L. F. KEBLER,
recalled as a witness in rebuttal, testified as follows:

DIRECT EXAMINATION,
BY MR. MILLER:

Q. I will ask you whether or not, Doctor, cocaine has any odor or flavor?

A. Cocaine is absolutely odorless and flavorless.

(Witness excused.)

Mr. Miller: I think we have concluded, but I would like a few minutes' conference with General Cox, but I think that ends our case.

The Court: We will now take our recess of twenty minutes.

(Thereupon the Court, at 11:40 o'clock A. M., adjourned until 12 o'clock M. of same day.)

After Recess.

DR. H. C. FULLER,
recalled as a witness in rebuttal, testified as follows:

DIRECT EXAMINATION,
BY MR. MILLER:

Q. With respect to the 28 or 29 per cent. of extractive matter of the combined coca and cola, which I understand you to have stated on your recross-examination was found in Merchandise No. 5, I will ask you whether or not that statement was based on Dr. Schaefer's process of extraction?

A. Yes, sir.

Q. Carrying that per cent. forward into the 900 gallons of the mixture known as Merchandise No. 5 and then into the 1250 gallons of Coca Cola syrup, what would be the relative quantity of combined coca and cola extractive matter contained in the 1250 gallons of the mixture meas-

ured in pints and gallons?

A. It would be .0—

Q. I mean to talk not about percentages, but pints and gallons; in the 1250 gallons of mixture, what quantity of total extractive matter of coca and cola combined in that 1250 gallons?

A. There would be about two pounds in 1,000 gallons.

Q. How much does it take to weigh two pounds?

A. We count a pound to the pint. I guess that would be as near as you could get it for that small amount.

Q. Do you think a pint of that matter would weigh a pound or not—that extractive matter?

A. I am not sure; I could not say.

Q. Based on the percentage of 29 per cent. which you gave, approximately what would be the amount in pints in this 1250 gallons of the combined coca and cola extracts?

A. It would be about two pints—I mean to the thousand gallons, if that is what you mean; to that larger batch it would be a little more.

CROSS-EXAMINATION,
BY MR. SIZER:

Q. Did you know from the literature the proportion of vanilla nut contained in the vanilla extract?

A. No, sir.

Q. Is not there any work that gives you that?

A. I presume there is.

Q. Does not Leach give it to you:

A. I could not say offhand.

Q. I want you to look at this table and state the per cent. of vanillin in vanilla extract.

A. The percentage runs from point—

Mr. Miller: Is that a standard publication? If it is, he can state from it.

The Witness: Yes, Leach is a standard publication.

Mr. Miller: That is all right then.

The Witness: It runs from .065 to .215. Each of those is a per cent.

BY MR. SIZER:

Q. Assuming a teaspoonful of vanilla extract is used in making a gallon of ice cream—is not that about the amount of the flavor?

A. I don't know about that.

Mr. Miller: I object unless they show there is a similarity between this coca tannin and the vanilla extract as to flavoring matter and taste.

The Court: I overrule the objection.

BY MR. SIZER:

Q. You say you do not know about that?

A. No, sir, I do not.

Q. Assuming there is a teaspoonful of vanilla extract used in making a gallon of ice cream, what would be the amount of vanillin in a gallon of ice cream?

A. I could not say.

Q. Would not there be one part in 250,000?

A. I have not the slightest idea.

Q. Can't you figure it out?

A. No, sir; I cannot here.

Q. Could you come down here and figure it?

A. I will do my best. I cannot say that I can do it.

Q. Come on down and do it.

DR. W. O. EMERY,
recalled and examined, testified as follows:

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Have you made any experiment to ascertain whether or not animal charcoal is a standard preparation and customary one for separating organic matters or chemicals from coloring matter?

A. It is very frequently used in de-colorizing materials or compounds which we wish to purify.

Q. Is it or not a standard test for the one that was undertaken by Dr. Fuller and detailed by him?

A. I should think so.

RECROSS-EXAMINATION,
BY MR. SIZER:

Q. In using animal charcoal for purification, does it not take up some of the substances that you are trying to purify?

A. That depends on the nature of the charcoal and its fineness, and whatever is taken up can be accurately determined.

Q. It may do that?

A. It depends on the solvent.

Q. And the fact is you reached a different analysis in the analysis of Coca Cola syrup from the analysis that Dr. Fuller did?

A. It had slightly increased percentages but they were not due —

The Court: That fact has been proven and it is not necessary to go further into that.

Mr. Miller: We have this letter from Mr. Hirsch and

the memorandum of Dr. Mallet which has been furnished by Dr. Caspari and we desire to offer that as an exhibit with his deposition.

The Court: Let that be done.

(The papers referred to were marked "A" and "B" by the stenographer and are as follows:)

(On letterhead)

CANDLERS, THOMSON & HIRSCH
ATTORNEYS AND COUNSELLORS AT LAW
221-22-27-28-29 Candler Building
ATLANTA, GA.

March 9, 1910.

Dr. Chas. E. Caspari,
No. 2108 Locust St., St. Louis College of Pharmacy,
St. Louis, Mo.

Dear Dr. Caspari:

I beg to enclose you herewith copy of the memorandum prepared by Dr. Mallet in regard to the tannin-like material of Coca leaves, as requested.

Very truly yours,

HH.Encl. (Signed) HAROLD HIRSCH

(Ex. B.)

MEMORANDUM BY DR. J. W. MALLET IN REGARD TO TANNIN-LIKE MATERIAL OF COCA LEAVES.

Coca leaves treated with water yields an infusion which is precipitated freely by lead acetate; gives a dark brownish or olive-green color with ferric chlorid and a deep-red color with potassium ferrid cyanide, and ammonia reduces Fehling's solution, but (like Catechin), is only slightly if at all precipitated by gelatin solution or by cinchonin sulphate.

The Extract "No. 5" evaporated to syrupy consistence over water—bath (to expel alcohol), taken up again by a moderate quantity of water, shaken with acetic ether (freely used), the ethereal layer drawn off, this latter evaporated to dryness on water-bath, and the residue taken up again by water, gave a solution which, after filtration, responded to all of these tests in substantially the same way.

Coca Cola syrup shaken up with acetic ether, the ethereal layer drawn off, evaporated in like manner to dryness on water-bath, and the residue again taken up by water also, gave an aqueous solution which responded substantially to all of above tests."

Mr. Miller: That closes the case except Doctor Fuller.

The Court: When he finishes that calculation he can be placed on the stand. Has the Claimant any other witness?

Mr. Hirsch: One more witness and one question.

DR. LUDWIG HEKTOEN,
recalled as a witness herein, testified as follows:

RE-CROSS EXAMINATION
BY MR. HIRSCH:

Q. On your examination you made a statement that you made a microscopical examination of the guinea pigs received from Dr. Vaughan and the rabbits received from Dr. Wesener.

A. I did.

Q. Did you use the Nissl stain?

A. I did.

Mr. Miller: I object to that as being in chief.

Mr. Hirsch: On Saturday last we made the same kind of an objection when Mr. Miller was filling in with Dr. Formad and—

The Court: (Interrupting) I remember my ruling. Just state your objection. Has there been any objection or criticism made to Dr. Hektoen's method?

Mr. Hirsch: Yes.

The Court: Then you can prove it.

Mr. Sizer: Dr. Formad said in order to make a proper examination the Nissl stain should be resorted to.

BY MR. HIRSCH:

Q. Did you use the Nissl stain?

A. Yes, sir; in the examination of the nervous system of these animals the Nissl stain was used.

Q. Did Dr. Le Count to your knowledge use the Nissl stain in the examination of his animals received from Dr. Haines?

A. He did.

Q. On the examination of the rabbits received from Dr. Wesener, could you or not state whether the increase in weight was due to water?

A. It was not due to water—not due to any undue increase of water. The usual constituents of the tissues of those animals were present in the usual proportion.

RE-DIRECT EXAMINATION,
BY MR. MILLER:

Q. Did you analyze any tissues of the rabbits?

A. I examined them by the naked eye and microscop-

ically and there was no undue accumulation of water.

Q. Did you analyze them?

A. I did so far as the examination.

Q. That means you looked at them.

A. And handled them and under the microscope.

Q. And looking at them with the naked eye, looking at them through the microscope, you mean you can tell whether there is any increase of watery substance?

A. Yes, sir.

Mr. Hirsch: That closes, except as to the copy of one diagram on the board there.

The Court: That may be filed later; if it is lost, it can be reproduced later. I remember I suggested that as it had been referred to by witnesses so much that a copy of it should be made.

Mr. Miller: Mr. Candler undertook to prepare a duplicate of what it is on the blackboard.

The Court: Yes, it is substantially a reproduction of that rough diagram on the board and nothing else will be added to it or taken from it. There will be no difficulty in reproducing that. If nobody else can, I will get Mr. Walker to reproduce it. It may be filed at any time.

Mr. Sizer: I passed it to counsel so that they could see it was correct.

The Court: Now, has Dr. Fuller made that calculation yet?

Dr. Fuller: Yes.

The Court: Then you can take the stand.

Dr. Fuller: I made it one part in 3,908.

BY MR. SIZER:

Q. Did you take the average of the vanillin as shown?

A. Yes, sir. .131 per cent.

Q. You mean that is the proportion of vanilla extract or of vanillin?

A. As I figured it, the proportion of vanillin.

BY MR. MILLER:

Q. Is there any similiarity or dissimiliarity between vanillin and vanilla extract and coca tannin?

A. No, sir.

Q. Has tannin any flavor?

A. No, sir.

Q. Has vanillin?

A. Yes, sir.

Q. Is it relatively strong or not?

A. It is relatively strong.

Mr. Sizer: We would like to have that calculation of

Dr. Fuller's filed as an exhibit to his deposition.

Mr. Miller: I have been trying to get these charts filed all morning and I object to filing anything now.

The Court: There is difference between a chart on a blackboard and a calculation of a witness, but you may ask him, Mr. Sizer, to give in detail his method of computation.

BY MR. SIZER:

Q. Read off your calculation.

A. I figure that 1 gallon contains 128 ounces and that two ounces make a tablespoonful; that would be 256 tablespoonsful.

Q. Is that not wrong? Is it not true that two tablespoonsful make an ounce?

A. Was not that what I said?

Q. You said you figured two ounces to a tablespoonful.

A. I meant two tablespoonsful to an ounce. That would be 256 tablespoonsful. That would be half an ounce to a tablespoonful, and the average percentage of vanillin in your vanilla extract is .131. That per cent. on a half an ounce —

The Court: You mean 1.31 per cent.?

The Witness: No. .131 per cent. —Now, I think I have made an error right here which would give the .131 per cent. of half an ounce—that ought to be six ten-thousandths of an ounce.

The Court: The vanillin would constitute six ten-thousandths of the ice cream?

Mr. Sizer: Oh, no.

The Witness: It would be about one part in 290,000.

BY MR. MILLER:

Q. Referring to the table contained in Leach as to the tannin in white California wine, and just read what they are, in white wine only —

Mr. Hirsch: Let me see that book before he reads from it.

BY MR. MILLER:

Q. Just read the total extractive matter, I suppose you have no objection to that.

A. White wine. Rhine wine types.

Maximum	4.38	grams	in	100	cc.
Minimum	1.51	"	"	"	"

Sauterne types.

Maximum	6.78	grams	in	100	cc.
Minimum	1.69	"	"	"	"

Southern French type.

Maximum 4.56 grams in 100 cc.
Minimum 1.09 " " " "

Port type.

Maximum 17.22 grams in 100 cc.
Minimum 2.43 " " " "

Mr. Sizer: Port wine is not a white wine.

The Witness: It is given here under white wine. I am reading the table. These are California wines.

Mr. Sizer: Well, a port wine is a red wine.

The Witness: I thought so but I don't know.

Mr. Miller: We are asking only for white wines.

The Witness: These are given as white wines.

Mr. Sizer: He evidently got mixed then.

BY MR. MILLER:

Q. Give the others.

A. (Reading)

Sherry and Madeira type.

Maximum 19.66 grams in 100 cc.
Minimum 1.31 grams in 100 cc.

Q. That is all under the table headed "California Wines?"

A. Yes, sir.

BY MR. HIRSCH:

Q. Are ports and sherries purified with sugar?

A. I do not know.

Q. If they were, the sugar would be included in this list?

A. Yes, sir.

Mr. Sizer: That is all, your Honor.

Now, we want to renew our motion for preemtory instructions and on that we would like to present some arguments.

The Court: You can state the grounds. The argument of counsel will be taken down and show the grounds but it will not be part of the record.

Mr. Sizer: The grounds are these:

1.—In the first place, that under all the evidence the caffeine in Coca Cola is not an added ingredient and not being an added ingredient it is wholly immaterial whether it is a poisonous or deleterious ingredient or not.

2.—That taking all the evidence and giving it the strongest possible construction in favor of the Government, caffeine is not within the general meaning of the term a poisonous or deleterious ingredient within the purview of the Pure Food Law, such as would constitute an adulteration in this product, Coca Cola syrup.

So far as the question of mixing, coloring, and so forth,

is concerned, we submit that there is absolutely no evidence that would bring the product in this case within that particular provision of the Statute, it being shown, as we think clearly, that the different animal remains, the sawdust and so forth that were found in the syrup, got into it in the keg after the syrup was compounded, and therefore there is no connection between the coloring matter in the syrup and those impurities.

Now, so far as the misbranding is concerned we say there is no evidence that the name "Coca-Cola," as the compound hyphenated name, used by the Claimant was ever intended to indicate that this substance contained any particular ingredient from the coca leaf or the cola nut, that it is not shown that there was ever any representation made by this claimant that it did contain any particular ingredient from the one or the other. It is not shown that any one was misled by the name into believing that there was any particular ingredient from either the coca leaf or the cola nut.

In the second place, the evidence does show that there are certain ingredients from the coca leaf and cola nut present in the mixture in the way of flavoring extract.

Now, on the imitation and the use of distinctive names of some other substances, in the first place, there are no such substances under the Government's own testimony known as coca and cola by their distinctive names, that coca and cola are not distinctive names for the coca leaf and cola nut.

In the second place, the use of the compound hyphenated name including the elements of the distinctively other substances is not obnoxious to the law and that the two well-known distinctive names may be combined into a third name; and so far as the charge of imitation is concerned, we say as a matter of law under all the evidence this article is not an imitation of coca leaf and cola nut. There cannot be any imitation of two different things at the same time; and, further, we say that under all the evidence the name "Coca-Cola" is the distinctive name of this product which distinguishes it from other food products. It has been used as the distinctive name of this product for a period upwards of twenty years and has never been applied to anything but this substance, and, therefore, regardless of how it originated, it has come to have a particular meaning, namely, the particular product in this case, and, therefore, under the express language of the Act, the article is neither adulterated not misbranded if it is known under its own distinctive name. Those are the general grounds on which we base the mo-

tion.

The Court: Now I will hear arguments.

Mr. Sizer: Now, so far as the allegation with respect to the coca leaf and cola nut, we say that is a fanciful picture or illustration of the name and it does not constitute any misrepresentation but simply shows to the people who see the barrels and kegs a fanciful representation of the leaves of the coca tree and the nuts of the cola tree, just as we might illustrate anything else in a pictorial way.

The Court: I will hear argument on this question. Now, counsel will understand that in the course of the argument I may ask questions and I may indicate impressions but it is not understood that any of these are definite conclusions unless so stated. I have had that habit when counsel are considering matters, of interrupting and questioning to draw out particular points. Now, my expressions during this argument are not to be regarded by any one as fixed and binding.

Now, assuming that caffeine is an added ingredient, could I well say under the testimony that there was not some evidence to go to the jury as to its effect as being deleterious?

Mr. Sizer: A poisonous or deleterious substance is one which in its inherent direct action is injurious. In other words it is something, as said by Dr. Kebler in his definition—it is something that impairs the functions of the organs. Now, under all the testimony in this case, caffeine does not directly or primarily impair the functions of any organ but on the contrary it stimulates the functions and as Dr. Kebler himself says, is a thing than enhances or improves the functions of an organ is the opposite of a poison. It is only poisonous in the same sense that the witnesses say that anything on earth is poisonous, that it can be taken in the body and used to excess and be deleterious.

MR. R. H. WILLIAMS: (Of counsel for Claimant) I am glad your Honor will ask all sorts of questions. I hope you will. What we want to do on this motion is to get a construction of this law, the Pure Food and Drugs Act. It is yet open to various constructions and we want all the light we can have regarding it.

Before entering upon the argument outlined to me, I would like to ask General Cox to look over his testimony and find out from the Government's testimony when the words "Coca" and "Cola" came to be the distinctive names they say they are.

The reason I ask that question is I think that some-

body has been stealing in this law suit. As far as I recollect the testimony it appears that the names "Coca" and "Cola" had been in existence, from the Government's own testimony, for a period of more than twenty years, and what I say is that the record shows that if there are any substances known as "Coca" and "Cola," they have as far as the record shows come into existence as the result of the popular use of our name. Of course coca leaves and cola nuts were in existence prior to the time we adopted the name of "Coca-Cola," but somebody has taken our name apart, if it be a fact and has used the name of "Coca" as the name of one substance and the name "Cola" as the name of another. I simply sugest that as preliminary to our investigation. I do not think in my view of the law there is —

The Court: There is undoubedtly some evidence, without expressing an opinion as to its weight—there is some evidence that there is a substance known as coca and one known as cola, and that would be a question to go before the jury.

Mr. Williams: But my proposition is that there is some evidence on the part of the Government that there are substances known as coca and cola but the same proof that shows that fact that there are such substances known as coca and cola does not show when those names came into existence. There is positive proof as to when we began the use of our name of "Coca-Cola," and therefore if it be true that there are such substances, there is no evidence to show whether those names anticipated our name or whether they took our name and pulled it apart and applied one of the parts of our name to one substance and one to another. In other words, can they go back of twenty years? They have not proven it.

Now, we have wandered far afield in the course of this very interesting investigation from the real legal question, as it seems to me, in this law suit, the material question. It has been very interesting to all of us to hear these scientific experts express their opinions on the matters that have arisen, but the legal question is not, as I view it under this law, whether the caffeine in Coca Cola may or may not be injurious, or whether the name Coca Cola may or may not be misleading. The question is: Is this article adulterated or misbranded under the Food and Drugs Act?

Now, the Government admits, of course, as your Honor has heard stated and I think perhaps your Honor has stated it yourself—the Government admits that there are certain simple foods that are not within the purview of this law although they may contain poisonous or deleterious

ingredients. That is an admitted proposition.

But I submit that counsel on the other side seem to argue that there are, under the express terms of this Act, certain mixed foods that are also stated not to be within the purview of this law.

Now, what we say is that under the concluding portion of this Section—has your Honor a copy of the law before you?

The Court: No, but I have read it several times.

Now, under the concluding paragraph of Section 88—I say the concluding paragraph because the law seems to be very curiously and badly arranged, if I am permitted to criticize the numbering of the sections and the arrangement of the sections.

The Court: It is difficult to try to see what they are referring to.

Mr. Williams: Yes, but your Honor knows the section we refer to. After setting out in the preceding section in elaborate manner under seperate heads what shall constitute adulteration and what shall constitute misbranding under this law, then there comes a long and sweeping provision. The first time I read it, I am free to confess I did not realize that it was such a sweeping provision. The first time I read it I thought the proviso clause applied to the heading misbranding. It did not occur to me what the language of the proviso actually meant, but it is clear enough when you come to consider it carefully, that is, that it is a clause so far as articles of food is concerned, that sweeps away everything that has gone before with reference to the question of either adulteration or misbranding.

> "Provided that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases."

Now, I say that we come within the express exception of those seven or eight lines of this law, and that it makes no difference what is said about added in Section 7, and it makes no difference as to what is said about adulteration in Section 7 or misbranding under section 8.

My legal proposition is this, if the article in question here, it being admitted under the Government proof, that the article, Coca-Cola, is a mixture—I say if we can show that it is an article known and sold under its own distinctive name, and which does not contain any added poisonous or deleterious ingredient, we are excepted from the provisions of this law, and all the other matter as to what is in the composition or whether it has one one-hundredth-

thousandth or ten one-hundred-thousandth of this, that or the other substance, has nothing to do with this law-suit. If we have an article that the law of the land recognizes as property, if we have an article that bears its own distinctive name and does not contain any added poisonous or deleterious ingredient, then we are not within the purview of that Act.

The Court: What is meant by the word "added" there?

Mr. Williams: Before we come to that, if your Honor does not care to hear me on the question of whether the distinctive name there has the same meaning as trade-mark in the common law, I will pass to discussion of the other question.

Now, the position I want to submit to your Honor is that is meant by distinctive name in this Food and Drugs Act is identically the same as common law trade-mark.

The Court: Have you any quarrel with the definition of the distinctive name given there?

Mr. Williams: No, sir. When I can agree with the Government, I do so cheerfully, but the distinctive name, as they give it there, makes it the same thing as the "trade-mark" under the common law.

The Court: I think you may so treat that.

Mr. Williams: Then the question becomes pertinent in the argument upon a motion of this kind, whether or not the proof made by the Government shows whether we can come within the common law trade-mark. In other words, have they denied or disputed—have they not only proven that we have a common law trade-mark and therefore a distinctive name under this Food and Drugs Act.

The Court: (Reading) "A distinctive name is a trade, arbitrary or fancy name which clearly distinguished a food product, mixture or compound from any other food product, mixture or compound."

The Court: You agree to that?

Mr. Williams: Yes, you are reading from the regulations?

The Court: Yes.

Mr. Williams: I agree to that, and I say it follows from that there has been established under the Government proof that we have a distinctive name or trade-mark in which we have a right of property.

The Court: I don't see the bearing of the trade-mark name. The Food and Drugs Act does not protect trade-marks, it protects distinctive names.

Mr. Williams: I understand that, and the very question I was making is that they are our distinctive name, and that may possibly be something broader than the trade-

mark name. It certainly cannot be anything narrower than the trade-mark name of cola, and under the Government's own definition. I agree with the definition given in the first section of the regulations, that that is a correct definition of a distinctive name. Now, if that is true, it is necessary to argue to your Honor, unless the matter is conceded, whether we have a distinctive name under the Government proof.

The Court: It is a question of what "Distinctive name" is under the statutes.

Mr. Williams: Yes, but because it is a question of what distinctive name is and because I want to point out to your Honor it means one and the same thing as trade-mark—as stated in the common law—that is what I am directing my argument to.

The Court: We will leave out the trade-mark name as bearing on the question. The question we have is as to whether it is a distinctive name, not as to whether it is a trade-mark name.

Mr. Williams: That is true, but if they are one and the same thing, it helps. The only point I had in using the trade-mark name instead of distinctive name, was that I wanted to call your Honor's attention to what the Courts have held constituting the trade-mark name, and whether the proof in this case has taken us out of a list of articles that are trade-marked or distinctive name. I want to use the word indiscriminately. That is the Government's definition under Regulation 20, or Regulation 8 or whatever it is.

The Court: You are familiar with the opinion of the Attorney-General in the whiskey case. That is apparently good-wording, and it is "A distinctive name is either one so arbitrary or fanciful as to clearly distinguish it from all other things, or one by which common use has come to mean a substance clearly distinguishable from everything else."

Mr. Williams: And that is exactly what I say has been the definition of a trade-mark from the beginning.

The Court: You need not go into the authorities on distinctive names.

Mr. Williams: Then there is one other suggestion with reference to the question of trade-mark name: following that to a logical conclusion and assuming for the present that that distinctive name of the Food and Drugs Act is the same thing as trade-mark under the common law, and that the definition of distinctive name is the definition of trade-mark—now assuming that the suggestion I make is this, that it appears from the Government proof that it is

a distinctive name, Coca-Cola, and that it has been registered under the law of Congress, the Trade-mark Law. It appears in the Government's own testimony that that name has been registered, and registered for a good many years. Now the proposition I desire to submit on that is this, that where the Government acted under one law, the Trade-mark Law, which antedated in point of time the Food and Drugs Act, the last trade-mark law having been passed in 1906, that the Trade-mark Law, as it now stands, the Government having admitted to registration under that law our name on the theory that it is a distinctive name, because that is the only theory on which it might be admitted, that it cannot now turn around under the Food and Drugs Act and proscribe us on the ground that it is not a distinctive name, and that we are doing wrong in using it.

The Court: You may have a trade-mark name that you could prevent any other people from using, and yet you might not acquire such a right to use that as to make it a distinctive name. It might have to grow up through time.

Mr. Williams: I appreciate your Honor's suggestion.

The Court: The trade-mark might be only a week old and have no distinctive name, so that the trade-mark really keeps people off of you until you can acquire the right to a distinctive name.

Mr. Williams: That is not quite true under the Trade-mark Law. The Trade-mark Law especially provides that when a name is of a distinctive character, it can be registered. It can only be registered on the theory that it is a distinctive name, and the Trade-mark Law provides that is prima facia evidence of the distinctive character of that name, and can only be overcome in case of a lawsuit against some one else by rebutting proof.

The Court: Will you read us the citation on that?

Mr. Williams: Yes, I have it right here. Section 10 of the Acts as amended in 1905, reads as follows: that the registration of a trade-mark under the provisions of this Act shall become evidence of ownership. In that respect this law differs from the English Trade Mark law—The English law, under the English Trade-mark Act, it makes it the absolute property of that individual until the name is taken off the roll in a direct proceeding, and nobody can make the defense that it is not a good trade name of a distinctive name at all, but it has to be some direct proceeding to remove that name from the roll, and after it has stayed there seven years, then the right becomes an absolute right, but during this period within the seven years of

the registration of the name, by direct proceeding, the name may, under proper circumstances, be removed, but in our case, we say under the common law we have by user a clear right to it. I do not want to mislead the Court. This law does not create any new property right. It simply—

The Court: (Interrupting) I understood you to say that the law provided that no name should be granted a trade-mark or registered as a trade-mark unless it was a name composing a characteristic of a distinctive name—and a trade-mark raises the presumption in law that it is a distinctive name—

Mr. Williams: I used that for this reason, in that I meant a distinctive name, not in the sense in which it may be used in the Food and Drugs Act but a distinctive name which is included under the definition of every trade-mark name under the common law. I say the very essentials of a trade-mark name, which grows out of first, the appropriation—first, the user, a man may use it a week or a man may use it a month or a year, as your Honor knows, or you may use it only a short time, and to that extent he is the first user and appropriator of it, and to that extent it is a property right. It is not necessary in order to secure that right that it should cover a long period of years, to create a property right, as your Honor well knows. It is the purpose of trade-marks to protect—it is as much a property right as your house and lot is a property right.

The Court: I do not think a trade-mark as such has any protection under this Food and Drugs Act unless it has become a distinctive name.

Mr. Williams: We agree with your Honor about that, but the point I am suggesting here was that it having been shown, the length of registration under the Act itself, under the trade-mark law, it having been shown to have been registered a great many years, that the Government having admitted it to registration and it further being shown that then the Government cannot now after having exercised or allowed us to do that, turn around under the Pure Food Law and reprimand us for the using of that name which in the first place, it being admitted on the theory that it was a distinctive name—

The Court: Suppose you had a trade-mark name that had been registered twenty years and never had sold a dollar's worth of goods under that name; would you be protected by this Food and Drugs Act?

Mr. Williams: Yes, you would.

The Court: If otherwise you did not violate it.

Mr. Williams: Yes, I think you would.

The Court: The very fact it did not protect it—provided it is not a distinctive name—if it is a distinctive name—

Mr. Williams: It can't be registered unless it is a distinctive name.

The Court. That is the point I wish an authority on. That is a point I want to get.

Mr. Williams: The first proposition in answer to that is that the whole idea of a trade-mark, regardless of the Trade-Mark Law—it is a common law—a piece of property, and that common law property is the one that is required because the name is a distinctive name, and the Government exercising its right under this Trade-Mark Law, has no attempt to register the name unless it has a distinctive name.

The Court: That is what I want authority on.

Mr. Williams: There is a provision in the Act—

The Court: There has been an amendment since then.

Mr. Williams: The trade-mark Act of 1905, Section 3—the registration of our trade-mark was immediately after the amendment of the Trade-Mark Law and this law was not in force at the time the first trade-mark was registered.

The Court: Well, what is it now?

Mr. Williams: I will get Mr. Hirsch to look that up for me. I thought I had another copy of the law here with that marked in it but I have not; but, may it please your Honor—

The Court: As I understand your proposition it is this—I have been thinking over it and it has suggested itself to me, if a compound or article does in the nature of that compound contain substances or certain materials which are essential to it and if it is given a name applicable to the whole compound and under that name as containing the essential elements it is sold and acquires a use and public consumption, a distinctive name in the minds of the public, then as I understand it your argument is that that ingredient which is essentially a part of it and has been during all that time is not an added ingredient.

Mr. Williams: Yes.

The Court: And therefore that the question of whether it is poisonous or deleterious is not material.

Mr. Williams: Yes.

The Court: That is your argument?

Mr. Williams: Yes.

The Court: Have you any authority on that proposition?

Mr. Williams: No, no authority that I know of directly on that proposition. There is no authority that I have found that really discusses this particular point.

The Court: I will hear from the other side on that pro-

position.

Mr. Williams: Then I will pass on.

The Court: Yes. If any of you gentlemen have any authorities, I would like to have my attention called to them.

Mr. Sizer: There are two authorities on that point that I will call to the attention of adverse counsel. One is the Macaroni Case, decided by—

The Court: I am familiar with that case.

Mr. Sizer: And the other is the case of Kenton v. The Commonwealth, 202 Penn., but that did not directly involve the question, but they do, as we think, sustain our position as to added ingredients within the meaning of the law. That was some foreign substance not naturally to be expected in the compound.

The Court: In the Macaroni Case, the question of using a foreign substance, wholly foreign to the product—

Mr. Sizer: Yes.

The Court: There are two or three cases, on the other hand, a Coca-Nola case, in which that definition has not been observed but they have never considered the question—in one or two cases—as to the poisonous and deleterious substances, but I cannot overlook the effect of the word "added." I will here state that I would like to get that 202 Penn. case. What page is that?

Mr. Williams: Yes, we will get it.

The Court: Did you say page 505?

Mr. Hirsch: I have it as page 25.

The Court: What does that case hold?

Mr. Sizer: Now, the Macaroni Case discusses what is an added ingredient and says that some substance wholly foreign to the compound in which it appears.

The Court: This distinction in that Macaroni Case—the word "Macaroni" has a definite meaning, it has almost a direct meaning such as the words, "apple, orange," etc., and it is easy to distinguish what is added to it.

Mr. Sizer: And we think "Coca-Cola" is.

Mr. Williams: There has been submitted to your Honor by counsel for the Government the debates in Congress that were had on that question.

Mr. Miller: And by you, too, also.

Mr. Williams: Yes.

The Court: But they do not discuss with any great particularity this question of compound. The question or the whole discussion impresses me with the idea that they were not thinking of that question.

Mr. Williams: Yes, that is exactly our proposition, and wherever the discussion arises it arises with reference to

that question of flavor or preservatives involved under the Seventh Section of the Act, dealing with simple foods—a distinction sought to be drawn between simple foods or mixtures and compounds on the theory that what Nature had put in would not be hurtful to any man, but that if it was put in in any other way it would be harmful.

The Court: There may be some instances but the general impression to my mind is that they were not thinking about the substance added to natural articles.

Mr. Williams: When you come to this particular question I am asking your Honor to consider—it is expressly limited, may it please your Honor, to mixtures or compounds—there is the crux of the whole matter in this law suit with reference to the question of the word "Added." It says: "Any article which is a mixture or compound." Now, to talk about adding to a mixture or compound—if you mean by adding you mean something that is put into the mixture or compound. Now, I submit as to the first statement that your Honor made with reference to the word "added" so far as this particular portion of the law is concerned, involves the very proposition that the article —that it means the same thing with the word "added" left out that it does with the word "added" left in. Now, that is the position that the Government must be driven to if they contend the word "added" means one of the constituents that goes to make up the mixture. If the law had meant to say that a trade-marked article—a distinctive named article described here, a distinctive name article shall not be taken out from under the law if it contains any poisonous or deleterious ingredients,—why not under the Act have said so—why should they have not used the word "added"—there has to be made some basis to start with, some standard for your Honor to determine in order to say as to whether it is a mixture or compound of Coca-Cola, made up of the ingredients that enter into it as shown by the chemists in the testimony; that is, Coca-Cola. The fact that caffeine is one of these ingredients does not make it an added ingredient in my proper interpretation of the word "added." If you say it does, the word "added" applies to all other ingredients.

It certainly will not be argued by the Government that because these ingredients are added—they are therefore driven to the proposition that the word "added" is utterly superfluous, and it therefore means the same thing with the word "added" in there as it would mean with the word "added" left out and we come then to the proposition whether under the law your Honor should hold that the Act itself meant the same, should be given the same interpreta-

tion without the word "added" as with it—assuming your Honor should hold that the word "added" meant only the constituent ingredients of Caffeine which is shown as one of the constituent ingredients of Coca-Cola—assuming we are wrong about that, the proper definition or interpretation of the word "added" used in this section of the Act, then we submit the question of law for your Honor to say under the proof in this case, as to whether a poisonous or deleterious ingredient—leaving out the word "added"—it is a question of law to say that the caffeine in this article is poisonous or a deleterious ingredient.

The Court: It seems to me in view of the conflicting proof of experts and other conflicts in the proof on that question, it would be pretty hard to say that was a question so far away—and without expressing any opinion whatever on just where the weight lies——

Mr. Williams: Of course, if your Honor rules—

The Court: I am not in doubt very much on that point, but I will hear you.

Mr. Williams: I will invite your Honor's attention to this fact—as to the words "poisonous" and "deleterious."

The Court: There would be more ground as to the word "poisonous" than "deleterious." The word "deleterious" is a different word from the word "poisonous."

Mr. Williams: In a very recent case decided by Judge Huff in New York and the only report I have of it is in one of the wholesale drug journals, I do not think it has been published in the Federal Reporter—holds that in a case prosecuted there by the Government where they sought to make a distinction between the words "false" and "misleading" as it occurs in the early part of this section, the Court held that these words—

The Court: Well, they are so very much alike—but the words "poisonous" and "deleterious" are not the same thing. As to the weight of the evidence, I do not give you any opinion, I do not intend to express any now.

Mr. Williams: I will ask your Honor to hear me on that point. I insist that it is a question of law under the peculiar circumstances of the case and because of the proof brought out on examination of the Government's own witnesses, I make this contention as a matter of law.

I can conceive, may it please the Court, that a great many cases would arise where the court would not as a matter of law say that these words "poisonous" or "deleterious" should be interpreted by the court, but under the peculiar proof brought out in the examination of the Government's own witnesses—and to the section of the law I desire to call your Honor's attention a little later.

I say then it becomes a matter for your Honor to determine as to the question—of whether or not caffeine as contained in Coca Cola is a deleterious or poisonous ingredient within the purview of this law.

The Court: There is such a contra-variety of opinion on the effect of caffeine on the brain and on the body, and whether there is any reaction or not or whether it is merely a stimulant of these things, that if the case reaches that point I shall be inclined to leave it to the jury to pass on these questions and instruct them that the words "poisonous" and "deleterious" which may cause injury are not to be used in the sense, perhaps, that they have been in some of these opinions.

A mere infinitesimal quantity of a given ingredient which may in large quantities be injurious, would not render it obnoxious to the Act; but the question is whether on the whole, taking into consideration the amount of the ingredient contained, the circumstances under which it is to be consumed, the character of the people who are to take it and the general circumstances surrounding it, and the tendency as to the accumulative effect—all those questions, and as to whether there is any reasonable ground of complaint on the taking of it as it is taken, there may be injury to the public or the greater portion of the public —that will be about the idea I have on it. I know there are some cases that say that some things might be termed poisons in inconceivable quantity—that would render it obnoxious to the Act—that does not seem a reasonable construction of the Act. The Food and Drug Law is to protect people from real danger and not from imaginary troubles.

Mr. Williams: May I venture the suggestion that the purpose of the law primarily is to avoid deception and incidentally to protect people against injury to health, but that grows out of the purpose to prevent or guard against deception—the first purpose is to avoid deception. For instance, an article can be sold with any poisonous substance in it; there is no limitation whatever—if you put on the label the proportion of the poisonous ingredients that it contains. I do not wish to burden your Honor with any useless suggestions, but I call your Honor's attention to this: Your Honor has stated what would be proper interpretation for the Court to put on the words "poisonous" and "deleterious"—now, it is conceded by the Government and it is universally conceded as far as I know, that the substances tea and coffee are not within the purview of this Act.

The Court: I do not see that that will cut any figure.

That is a natural product and the Statute can have no reference to that—coffee and tea may be or not injurious, that is an entirely different question.

Mr. Williams: If it is shown that caffeine acts the same way in all three substances and it is conceded that tea and coffee are not within the purview of the law, as a matter of law these words cannot mean—"poisonous" and "deleterious" cannot mean that caffeine contained in Coca Cola—because it contains caffeine, that is my proposition.

Now, another thing, under this Act the title of which is: "An Act for preventing the manufacture, sale or transportation of adulterated or misbranded or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes," and it goes on in the body of the Act and for nine times it undertakes to say what is and what is not misbranded or adulterated, and it does not use any term that covers "poisonous" or "deleterious" foods, drugs or medicines or liquors that are used in the caption until we come to the eleventh section of the Act, unless it should relate back, I do not know that it does—that may relate back to that question as to what is included under "poisonous" or "deleterious" or "injurious."

In the eleventh section of this Act there is a provision with reference to importation. I want to call your Honor's attention to the matter as to the force—the question of importations. I ask your Honor to look to section 11 of the Act which says: "The Secretary of the Treasury shall deliver to the Secretary of Agriculture upon his request from time to time samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee who may appear before the Secretary of Agriculture and have the right to introduce testimony, and if it appears on the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this Act or is otherwise dangerous to the health of the people of the United States or is of a kind forbidden entry into or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported or is otherwise falsely labeled in any respect, the said article shall be refused admission."

The Court: I have no question but that this Act does not prohibit the sale in interstate commerce of things that are injurious to health, there is no question about that. I do not think the Government will contend that.

Mr. Williams: I was going to use this as an illustration—in that language—anything dangerous to the citizens of the United States. Suppose you say that coffee and Coca

Cola were of foreign manufacture and that they came into our country, both knocking at the door of the custom house and at one and the same time,—could your Honor admit tea and coffee and exclude Coca Cola?

The Court: If that came before me I would have to hear it on evidence as to whether tea and coffee were dangerous to health.

Mr. Williams: I understand, may it please your Honor. I base it on the proposition that tea and coffee were conceded not to be within the purview of this Act—and it has been conceded—

The Court: It is not conceded on the ground that they do not contain anything injurious to health but that on the ground that the ingredient caffeine is naturally a constituent of the natural articles tea and coffee.

Mr. Williams: I cannot see upon what logic the line could be drawn. Caffeine is the only question under consideration, in Coca Cola, as to whether or not it is poisonous. Then, that being so, it seems to me impossible to draw an arbitrary line as to the caffeine-containing substance, whether it is simple, mixed, or being imported the same as tea and coffee.

The Court: I do not know but what tea and coffee could be stopped at the borders under that Statute.

Mr. Williams: It says excluded. Reasoning from analogy you exclude one as a matter of law; if you do that, you would be bound to exclude the other.

The Court: Counsel for the Government did not attempt to argue from that point, they said it was not adulterated or misbranded.

Mr. Williams: I have this suggestion to make with reference to the word "poisonous"—with reference to the poisonous or deleterious ingredient—that the Act does set out, Section Eight, what constitutes the things that the Government considers to be poisonous or deleterious ingredients. Caffeine is not named in that list so that if caffeine is a poisonous and deleterious ingredient within the purview of the law, we will be placed in this strange situation—that if we should put the proportion of caffeine on our label we could not sell our goods without violating the law although if we had cocaine or opium or any of those poisonous drugs in it we could sell it. This seems to me a proposition that you cannot escape from.

The Court: I did not follow you.

Mr. Williams: It is just this: Caffeine is not set out in that list of poisonous drugs or deleterious substances under Section Eight. Now then, anybody can make up an article of food and place in that article any of these poi-

sonous substances under the express provisions of that Act. Yes, under the language of the Act, provided he puts on the label the proportion of the poisonous substances contained in the mixture. That is, other things being out of the way.

The existence in the mixture of these poisonous ingredients is not forbidden by the law. All you have to do in case of a proprietary medicine—

The Court: That would be as to the misbranding feature, but that would not prevent an article containing cocaine—protect it from being declared adulterated.

Mr. Williams: I am just speaking of the language of the Act—

The Court: It is not the misbranding but as to caffeine under the adulteration by—an article which is adulterated with cocaine would be nevertheless adulterated with cocaine, and that would be true whether it was stated on the label—

Mr. Williams: I am not speaking of adulteration—I am simply showing—suppose we had an article of food that did contain a certain proportion of opium, and if we put the proportion of opium on that label on that article of food, then there would be as far as this Act is concerned, nothing to prevent our selling that article of food.

Now, if in another article of food that was made up of the same ingredients but instead of cocaine there was caffeine put in it, we could not sell that article of food without being guilty of adulterating, although we did state it had caffeine in it on the label.

The Court: It is not dependent on the label but whether it is an added ingredient or not.

Mr. Williams: Yes, derivatives of these articles—no derivatives appear in the state of nature. To my mind caffeine is not a substance within the contemplation of this Act that can be characterized as poisonous or deleterious under the law.

The Court: I think that shows that caffeine is not regarded as one of those substances that is so dangerous to the public health that its presence should be guarded against; that is about as far as I think you can go.

Mr. Williams: If it was such a substance that you could not use it without being subjected to the penalties of the law, but if it contained other poisonous substances—

The Court: There have been numerous cases where articles have been held to be adulterated, with deleterious substances, that are not in the list of substances that are so dangerous that they have to be stated on the label. You take the Bleached Flour Cases—nitrates is not mentioned as a thing that has to be placed on the label yet it was held

to be adulterated. In the Macaroni Case the chrome yellow —it was deleterious but it did not have to be stated on the label.

Mr. Williams: In the Macaroni Case the chrome yellow was an admitted ingredient, and that other question did not arise. There is a section that I desire to call your Honor's attention to.

The Court: I will be very glad to get that.

Mr. Williams: I am referring to a section of the Trade-Mark law that I would be glad to call your Honor's attention to.

The Court: I would be very glad to have it.

Mr. Williams: That is, any mark by which the goods of the owner of the mark may be distinguished from other goods of the same class, shall be refused registration as a trade-mark on account of the nature of such mark unless such mark consists of or comprises scandalous matter, etc., and provided further that nothing herein shall prevent the registration of any mark used by the applicant or his predecessors or by those from whom the title to the mark is derived, etc., which shows an exclusive use of the trade-mark of the applicant or his predecessor from whom he derived title for ten years next preceding the passage of this act.

In the trade-mark registered in 1905 by the Claimant in this case it was registered and statements made to comply with the provisions of that Act that it had been in actual exclusive use and in possession of the owner for a period of ten years before it was transmitted for registration and before it was admitted to registration, and that being so and it having been admitted that the registration is under the other provisions of the law, I have the right, your Honor, to say that makes a prima facie case under the Trade-Mark Law, leaving out of question anything as to the common law statement or distinctive name. If you have made a prima facie case, not only does the Government not overturn the prima facie case under that trade-mark law, but the very proof that they introduce here shows in and of itself and that is a fact, that it was a name appropriated by the Coca Cola people and used by them for a long period of years.

That there was no other name in existence—Coca Cola—no other name of a substance known as Coca Cola—that was one matter that I desired to call your Honor's attention to—that provision of that law I wanted to call your Honor's attention to, as to the registration for ten years—that it had been in exclusive use of the owner for ten years —that makes a prima facie case of a trade name.

The Court: Unless there is some evidence that before the expiration of that ten years your company changed to some extent the constituents of that compound and you have to date distinctive name from that period.

Mr. Williams: If that is so we can go back to the common law definition, which is the same thing—I think in 1902 or 1904—I don't care what date it refers to, may it please your Honor, it has been shown that it has been used under that name for a number of years, it was shown by the Government proof.

The Court: Is that the only point that you intended to argue? I will be glad to hear the argument of the claimant in support of the motion and on any other matter.

Mr. Williams: I thought your Honor wanted to hear from me and then from the Government from that.

The Court: I desire to hear the whole argument on your side.

Mr. Hirsch: On the question of the construction of the word "added."

The Court: I do not care to hear further on that until I hear from the Government on that.

Mr. Hirsch: That was the only point that I cared to discuss, the "added" and distinctive name.

The Court: I will first hear what the Government has to say.

Mr. Sizer: I have got some authorities over at my office that I intended to use. I intended to let Mr. Hirsch and Mr. Williams open the case and then I expected to close it.

The Court: I would be glad to have the authorties.

Mr. Sizer: I have the authorities and I would like to say that I believe if your Honor would wait until morning and take an early adjournment—

The Court: I would like to get all this argument in today. I would like to get the views of counsel. It is not necessary to close it today, I am not desiring to do that, but I would like to hear you on it. You must have an entirely definite theory about your side of the case.

Mr. Sizer: Well, so far as the question of poisonous or deleterious ingredients are concerned —

The Court: I say, I would leave that question to the jury without any expression of an opinion under this evidence unless the question of added ingredients is in the case—that is the controlling question in my mind. If it were simply a question of the effect of caffeine, without expressing any opinion as to where the weight of the proof is. My opinion is such that I would let it go to the jury and as to whether the proof is sufficient or not I do not say, but I

would let it go to the jury.

Mr. Sizer: I understand that your Honor does not desire to hear from us any further at the present on the adulteration theory.

The Court: Unless you want to say anything on the question of it being colored so as to conceal it.

Don't misunderstand me—if you have any authorities on this question of added ingredients I will be glad to hear them.

Mr. Sizer: As to poisonous and deleterious ingredients —that feature of the matter?

The Court: My mind is made up on that point.

Mr. Sizer: And so far as that feature is concerned, it must go to the jury.

The Court: Yes.

Mr. Sizer: Then so far as the added ingredient feature of it is concerned, one additional authority I wanted to refer to was some proceedings that took place in the Houses of Congress during the consideration of this Bill and some of the testimony that was introduced—some statements that were made—especially a great many statements that were made by Doctor Wiley who directly had charge of the Bill on behalf of the Government in the hearings before the committees.

The Court: Yes—

Mr. Sizer: That is the reason I sent over for the paper.

The Court: If want Mr. Hirsch or Mr. Williams to bring out any of those points, I will hear them and you can close.

Mr. Hirsch: I only wanted to take up the Act as to the meaning of the word "added." I did not want to refer to any authorities, but I wanted to refer to different places where the word "added" is used.

Mr. Sizer: I will state our views:

Section 7 of the Act provides that any article shall be deemed to be adulterated if it be mixed, colored, powdered, coated or stained in a manner whereby damage of inferiority is concealed. We say that implies some sore of causal action in the mixing and coloring and concealment.

The Court: You mean intentional concealment.

Mr. Sizer: Yes, intentional concealment. It cannot mean anything else. Suppose a man makes a lot of Molasses and after it has been manufactured and is sitting on the table, a fly drops into it. You would not prosecute the man for coloring the molasses whereby the fly would be concealed, although it might be that because the molasses is so colored that that might cover such an impurity. This means to cover a case where the article was originally

good, for instance, vegetables and things of that sort, or meat that is decayed and has become inferior, because of time or because of some circumstance that has impaired its original value, and then the owner or vendor or manufacturer resorts to coloring or painting or staining to conceal the fact that it is damaged and is an inferior article. I submit it can not be said that the mere fact that after the syrup is made and it is poured into a keg in which there happens to be a fly's leg or a bee's wing or a little sawdust, that that permits the Government to come in and confiscate the syrup because we colored it, and by that coloring these inferiorities that crept in afterwards are concealed. I think this clause shows the distinction, the 6th sub-section provides if it consists in whole or in part of a filthy decomposed of putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal or one that has died otherwise than slaughtered.

Now, if it is consented that this product is adulterated because a fly's leg or bee's wing or sawdust or matters of that kind got in it after it was manufactured, then it would be under that 6th sub-section.

The Court: And that only applied to one keg.

Mr. Sizer: Yes, there is no particular proof that anything else in the nature of any fly's legs or anything else, was in any other of the kegs. On the contrary, the only evidence bearing on the manufacture of the product in general is the testimony of that Atlanta man who strained seventeen thousand gallons and never found anything but saw dust, and so far as the sawdust, the evidence is that the Government officials bored a hole through the sides of the keg and naturally that would carry some saw dust in. But from a legal standpoint, it is perfectly manifest that the clause on which this information is based has no application to a case of this kind where the impurities that are found in the product came into it manifestly after the product, was manufactured, and where there is no intentional coloring with the purpose of concealing the damage or inferiority.

The Court: If the process of manufacture contained elements of inferiority and at the same time the coloring matter was put in to conceal that inferiority, you mean.

Now, it occurs to me that one question for the Government is whether the coloring matter in any way concealed the sawdust. It might render it a little more difficult to see, but it is a question for the Government as to whether anybody could not see the sawdust who looked. So far as the bacteria in the infusion, I don't see how the caramel

could conceal the bacteria.

Mr. Sizer: There is no effort to prove any germs in this syrup at all. I think it is perfectly manifest what this sub-section is aimed at. Your Honor knows that dealers will get food products, meat, vegetables, and things of that kind, and after they have been kept they begin to look withered and have a bad appearance, an obnoxious appearance, and people won't buy them. Now there are substances that can be spread over vegetables and meat to make them look fresh. For instance, I was reading about a substance put on hamburger steak.

Gen. Cox: That is not in evidence.

Mr. Sizer: I am not talking about the evidence but about the law. Hamburger steak after it has been ground up and stood a while, don't look nice, and they take some kind of a sulphate and sprinkel it over it, and it has a beautiful fresh red color whereby the fact that the hamburger is damaged and inferior is concealed, and that is clearly within this section; but a case like this where some kind of impurity comes into the product after it is manufactured, and no casual action shown and no intent to put the coloring matter in to conceal the inferiority, but on the contrary it is shown it is a mere incident that nobody thought or knew of at the time the product was manufactured—I submit it is not within the purview of this sub-section at all.

The Court: Has that section even been construed?

Mr. Sizer: I have never found any case where it has been construed. I don't know whether the counsel for the Government has or not.

Mr. Hirsch says it has come up a time or two and in every case it has been some case like the one I suggest.

The Court: The question of purpose to conceal has not come up.

Mr. Sizer: I don't think it has.

Now, I understood your Honor said I might call the Court's attention to some other literature bearing on this question of the added ingredient.

The Court: Before you argue upon the debate, I have a reference from my book of an authority to the effect that in construing the statute, the Court will be aided by reference to the reports of the committee reporting the bill and the remarks of the chairman of the Bill, but not by the record or debates of the legislative body. The reference is 166 United States, 318. You had better look at that.

Mr. Sizer: In the brief I have, I have a citation to a number of cases to that point.

The Court: Has there been any case that goes to the extent of allowing the miscellaneous debate of individual members of Congress. That would be a very uncertain method.

Mr. Sizer: Most of the references I have to make are statements made by the Chairman of the Committee, Mr. Mann, who had charge of this Bill in the House—statements in the course of the debate explaining the scope of the different provisions and the purpose for which they were inserted, and matters of that kind.

The Court: The Government relies on the statements made by the Chairman of the Senate Committee, and you rely on the statements of the House Committee?

Mr. Sizer: Yes, and I think you will see by reading the debates that Mr. Mann had a more extensive knowledge and had made a more careful investigation than perhaps any other member of Congress, and it was a House Bill under the charge of Mr. Mann, which was finally passed by the Senate. The Senate Bill was not passed.

Now let me come to some of the references.

The Court: Are they references not contained in this extract that has been handed to me?

Mr. Sizer: Is your Honor ready to look at the Congressional Records now?

The Court: No, I just asked you whether you wished to call my attention to anything not included in this extract which you handed me.

Mr. Sizer: Yes, sir. In the first place, if your Honor does look through it, it is shown throughout the hearing before the Committee and in the testimony of witnesses most especially in the talks that Dr. Wiley made before that Committee, that this Bill was never intended in any sense to be a sumptuary or prohibition law. It is repeated time and time again that it is not the purpose of this Act to interfere with the right of a man to eat anything on earth he chooses to eat. Dr. Wiley says—

Mr. Miller: I don't think counsel has a right to make that statement in the presence of the jury.

Mr. Sizer: I was not repeating with reference to the jury. I just say that that appears not only before the Committee but in the debates in the House, and I just called attention to it.

The Court: Now, unless there is some authority to the contrary, I shall rule that I will limit my investigation to the reports of Committees, the statements made by the Chairman of the two Committees with reference to the purposes of the Bill. I think that is a reasonable limitation and you can govern yourselves by that.

Mr. Sizer: I will call attention in the first place, to the statement by Mr. Mann. He is making a long explanation of some provision that some member inquired about. This is on page 9178 of the Congressional Record, June 21, 1906.

"Another provision which has given rise to considerable controversy, at least out of the House, is the one which affects whisky. We found that there were two antagonistic interests involved in the whisky question. One was those who wished all whisky sold, as far as possible, to be the whisky as it came from the still after being aged; the other was the interest which wished to drive out of business, practically, the pot distilleries, and would require the whisky in the market to be made by so-called 'rectification,' or other processes, out of ethyl alcohol, pure alcohol with the addition of coloring or flavoring matter. The committee did not take a decided stand in favor of either of those interests against the other, but leaves each to stand upon its own foundation, upon its own merits, but requiring that the so-called 'rectified' whiskies shall bear upon their label the statement that they are imitation, compounded, or blended, so that the purchaser may know when he buys that class of goods that he is not obtaining whisky as it came from the pot still, simply by aging in barrels or otherwise."

I think originally there was some provision about whisky, and then he goes on to talk about the questions that were brought to bear.

"We were asked on the one side to adopt an amendment which would have put out of business the straight-whisky manufacturers; and we were asked on the other side to adopt an amendment which would have put out of business those who mix or blend the whisky. We did not recommend and have not recommended a proposition upon that point as either side requested, thinking it was not the duty of the committee to recommend to Congress legislation which would determine what people should either eat or drink, but rather to recommend legislation which would permit people to know what they are eating or drinking."

Again, a little further on referring to some communication they had from people outside with reference to the matter, he says:

"Doubtless the gentlman who sent the telegram is in some way interested in the sale of the articles. We have had a number of suggestions of that kind made, coming generally, though not always, from people who wish to sell the articles, and who, if they believed it would in-

crease the sale of the articles, would be the first ones who would want the advertisement on the label."

That was with respect to requiring an advertisement on the label as to the proportion of cocaine or any other poisonous substances. That is the way it was originally drawn.

Mr. Mann says:

"We cannot undertake to prevent the man who is an opium fiend from obtaining opium, but we can undertake to prevent the man who never wishes to take opium from taking it without knowing that he is taking it."

And in the debate the following day at page 9271, this occurs:

"Mr. Chairman, what will be the effect of this bill, and what is its purpose? I believe that it will promote honesty in trade, which is certainly desirable and cultivate the habit of telling the truth, which, I take it, is equally desirable. It will not deny men the privilege of getting drink on bitters, if they choose to do so; but it does say that they shall not be deceived into intoxication in the belief that they are taking harmless medicines. It will not take away from the cocaine or opium victim the privilege of his poison, but it does say that a man not addicted to these drugs shall not be seduced into the habit unknowingly. It does not even deny those who have a taste for such things the right to buy adulterated foods and drinks, but it does say that those who prefer honest food and drink shall not be swindled with adulterants nor poisoned without knowing it by an article of interstate commerce.

And so throughout the debate, both in the House and before the committee, the proposition is pressed time and time again that this is not intended as a sumptuary law, and is not intended to prevent man from eating or drinking anything he pleases, but is one to insure that he gets what he wants and does not get what he does not want.

And now, along that line, following out that purpose, Congress comes along and enacts this provision with respect to adulteration that an article shall be adulterated if it contains a poison or a deleterious ingredient, or if it contains an added poison or leleterious ingredient.

Now, what does that mean? It means something that a man would not naturally expect to find in that article, something foreign to it. If a man goes and buys a compound, well-known, and that he himself has taken, or he knows what he wants and is getting, if he does not get anything in that compound except what is a natural and essential constituents of the compound, there is nothing added, and he is not being deceived. If a man accus-

tomed to drinking Coca-Cola goes and buys a glass of Coca-Cola, the fact that there is caffeine in it does not deceive him. He may not know whether caffeine is in it or not, but he knows that he likes that particular drink, with the particular ingredients in it, and he is not deceived unless there is something put into it that he would not expect to find in there or would not be in there if the article were made according to its proper formula.

Now, the result of the contention of the Government that every element in that compound is an added ingredient —

The Court: You need not go further on that just now.

Mr. Sizer: I will not call that up further, your Honor indicating that you do not care to hear further about that.

The Court: I will hear from the Government on the question of imitation. You can come to the question of whether there is anything misleading in the name. I would like to hear from you on that.

Mr. Sizer: The point is that this name Coca-Cola originated about the year 1887. A man by the name of Pemberton in the city of Atlanta invented a syrup which he called Coca Cola Syrup & Extract and got a trade name for it. So far as the proof shows the name Coca and Cola were little known in this country at that time except possibly, and that even is not shown but we may say that the name cola was known among scientists as being the name of a tree that grew in Africa, perhaps in the West Indies, and some other tropical countries. The word coca was known among scientists, and scientists only, as designating a shrub that grew in South America. Those two names were taken, both the names of a foreign substance, and none of the ordinary people who drink soda fountain drinks, knew anything about, and were combined into the compound hyphenated Coca-Cola. Suppose there had not been a single drop of anything derived from the coca leaf or cola nut in that compound. I submit that this defendant would have had a perfect right to adopt that as the distinctive name of this product, and they would have had a right to have had the name trade-marked as they did.

The Court: Do you carry your argument to this point; that a man would have the right to adopt or would be protected under the Food and Drugs Act in a distinctive name, although the distinctive name contained or employed a false statement?

Mr. Sizer: Exactly.

The Court: Suppose in other words, a man had been selling Brown's Extract of Coca and it was not extract

of coca at all, but he had been selling it for forty years and everybody had bought that as Brown's Extract of Coca.

Mr. Sizer: I think he would under the Phosphate Case, the Calcium Acid Phosphate Case, but that is stronger than this case.

The Court: I don't say that they are parallel, but I was just getting your idea.

Mr. Sizer: The calcium acid phosphate case was this kind of a case.

The Court: Where is that reported?

Mr. Sizer: I don't know, but it is food and drug No. 579. I don't remember by whom it was decided and this does not show.

The Government filed a libel against 100 barrels of a product labelled "The Provident Chemical Company of St. Louis, Missouri," 300 pounds CAP Guaranteed under the Food and Drugs Act. They alleged in the libel the substance referred to under was barrelled and shipped under the representation by the consignor, and the same at all times has been so branded by said consignor as falsely to appear as pure calcium acid phosphate without any adulteration, therefore that the said branding of the said substance aforesaid was is and is wholly false; that the said substance has at all times been and is adulterated with approximately 50 per cent corn starch; that said adulteration has been mixed and packed with the said calcium acid phosphate so as to produce and lower and injuriously affect the quality and strength thereof; that said corn starch is of far less value than the said calcium acid phosphate; that the mixing of the same with the said calcium acid phosphate does greatly damage the same and does conceal the inferiority of the entire substance made by the said mixture.

The claimant denied that the said substance referred to as 100 barrels of the calcium acid phosphate, is or is represented to be, or ever was represented to be or is known or ever was known as calcium acid phosphate; denies that said substance is or is used or was or was used as a drug or food, or in the preparation of food within the meaning of the Food and Drugs Act of Congress, approved June 30, 1906, denies that each of the said barrels which contain said substance is branded other than Provident Chemical Works, St. Louis, 300 pounds CAP guaranteed under the Food and Drug Act; denies that the said substance was ever represented as the pure calcium acid phosphate, or is pure calcium acid phosphate without any adulteration; denies that the said sub-

stance is or ever was either barreled or branded to appear as pure calcium acid phosphate without adulteration or to appear as pure calcium acid phosphate; and denies that the branding of said substance as C. A. P. is wholly or at all false.

The Court: What did the Court hold?

Mr. Sizer: The contention was that this was branded calcium acid phosphate when it contained 50 per cent of corn starch and was not calcium acid phosphate at all, and the Court found it to have 33-1/3 per cent of starch, which however, the Court held was not a deleterious ingredient. Now, the Court says: It is provided in subdivision 4, Section 8 of the Act of June 4, 1906 (34 Stat. 768) under which this action is prosecuted, that "an article of food which does not contain any added poisonous or deleterious ingredient, shall not be deemed to be adulterated or misbranded in the following cases: 1st, in the case of mixtures of compounds which may be now or from time to time hereafter known as articles of food under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article is manufacturer or produced.

2nd. It really appears from the evidence that the substance referred to in the libel and sought to be condemned in this action is compounded of calcium acid phosphate and corn starch, the mixture containing about 33-1/3 per cent of corn starch.

It also appears that the addition of corn starch does not render the mixture deleterious or in any way dangerous to the health of persons eating food in the proportions in which that compound is used.

It further appears that the said compound when first manufactured was known as Cream Acid Phosphate; that said name was thereafter condensed to the use of the arbitrary letters C. A. P. and applied particularly to the substance or product referred to in the libel for the purpose of distinguishing it from other products; that the claimant herein adopted said letters, C. A. P. as its trademark. In other words the substance referred to is manufactured and sold under the distinctive name of C. A. P.

It follows from the foregoing that the plaintiff is not entitled to recover in this proceeding; that while the article sold under the trade name of C A. P. may be classed as an article of food, it does not contain any poisonous or deleterious ingredients within the meaning of the statute above quoted, and the libel must therefore be dis-

missed.

The Court: They thought it was not adulterated but under the misbranding section, do you mean to say if there was a false statement in the name that it would be protected by reason of the fact that it was a distinctive name?

Mr. Sizer: It was charged that it was misbranded.

The Court: But the Court did not find that it was misbranded or that it had any false statement in it.

Mr. Sizer: It had this false statement, that the name was Cream Acid Phosphate and it had 33-1/3 per cent of corn starch, and therefore there was a misrepresentation in the name.

The Court: The Court was not passing on that name. The question the Court was passing on was whether it was adulterated by something else.

Mr. Sizer: The libel and the answer involved that very issue. They alleged it was misbranded.

The Court: I am only referring to what the Court passed on.

Mr. Sizer: I take it the Court decided the whole question. That was a clean cut issue as to whether the name Cream Acid Phosphate was a misbranding, when it contained 33-1/3 per cent of corn starch.

The Court: Do you mean that if an article has a distinctive name, that it would be protected under the Food and Drugs Act from the charge of misbranding, even if it had a false statement in it?

Mr. Sizer: I do, with the utmost confidence.

The Court: Give me any authority on that proposition you have.

Mr. Sizer: Now, suppose we started out with a name twenty years ago, with an article that misrepresented its ingredients. Suppose that particular name has been used so long and so exclusively in the manufacture of that particular product that it has come to be recognized as designating that particular product and no other, that that is its distinctive name.

The Court: Suppose something has been sold as apple cider and it could be shown that it didn't have any apple cider in it, it could not be protected, could it?

Mr. Sizer: Yes. Soda water hasn't any soda in it. Take "Grape Nuts"—that is a breakfast food, and nobody will pretend that it has any grapes in it or any nuts.

The Court: You are getting away from the question.

Mr. Sizer: I say although there are no grapes and no nuts in the product, that is a recognized thing, that it has come to be recognized as a breakfast food and will be pro-

tected.

Mr. Miller: I object to counsel using illustrations like that as being sanctioned by the Government. There is no proof of that.

The Court: Counsel did not mean to say or to imply that it is sanctioned by the Government; he is merely using it as an illustration of what was not recognized as an infraction of law.

Mr. Sizer: That is all I meant. I do not know whether the Government sanctions it or not, but I say as a matter of common knowledge, everybody knows that "Grape-Nuts," when you used that hyphenated name, does not indicate a product that has grapes or nuts, but it indicates this particular article manufactured by a particular concern.

Now, the mere use of a name of that kind, the mere fact that we use the name "Coca-Cola," does not necessarily indicate that we have in that substance anything derived from the coca leaf or cola nut.

The Court: But would not that be a fair question to go to the jury? Could I absolutely say that the use of the word might not mislead the average man?

Mr. Sizer: If there were any proof that we had made any representation at any time that we had any coca or cola or anything derived from the coca leaf or the cola nut in this product, or if there was any proof that any man of the many millions that have drunk Coca-Cola, bought it under a misapprehension that it had something from the coca leaf or the cola nut, there might be.

The Court: Would not that be a matter of all questions—proper to be submitted to a jury of twelve men to get their average judgment rather than to have the judgment of one person?

Mr. Sizer: In view of the fact that there are probably as many of these compound names that are totally misrepresentative of what is in the compound as there are names that describe what is in the compound, I submit that the name does not constitute misrepresentation on that subject at all. There must be some evidence indicating that the manufacturers of this product hold it out as containing such and such substance.

Now, counsel referred to the Syrup of Figs Company, and that might be said to be nearer sustaining their contention than anything else, but when examined it does not do so.

The Court: Where is that case?

Mr. Sizer: 73 Fed., and the opinion is by Judge Taft of the Ciccuit Court of Appeals.

Mr. Miller: It finally went to the Supreme Court of the United States but I have not the citation here.

Mr. Hirsch: I have the citation; I can get it.

Mr. Sizer: I think that case illustrates the difference between the contention of the Government and our contention in this case. In the Syrup of Figs case the manufacturer of Sryup of Figs had filed a bill to enjoin another concern from using their name, claiming they had used it a long time and had acquired the exclusive right to it, and that the use of it by another was unfair competition.

In the first place it appeared in the veidence that there was not a trace of figs in the syrup, not even enough to give it a flavor.

Mr. Miller: A small percentage.

Mr. Sizer: Not enough to give it a flavor, and on the wrapper the manufacturer represented it contained an essential quantity of figs and that was one ground on which the court decided it. In the third place, the court held to call a thing a syrup of any product necessarily implies that it is derived or manufactured by stewing up that particular article in sugar, that the name implied that it was a product derived by stewing up figs with sugar, and the court held that the complainant did not come into court with clean hands, that the complainant misrepresented by their wrapper what was in the product and that they could not give an arbitrary name or trade name but it must be descriptive of what was in the article, and the bill was dismissed for that reason.

But even in that case, assuming that Syrup of Figs had been used by that manufacturer for a term of years to designate the particular product that he himself was putting on the market and no one else had ever manufactured anything under that name, I submit if the Government were prosecuting that man under this law and charging that he was guilty of adulteration or misbranding because he was misrepresenting the contents of his compound, it would be sufficient answer for him to say: "I have used that name exclusively for twenty years and the name has never been applied to anything else but this product, and therefore it is a distinctive name."

Mr. Hirsch: The citation is 187 U. S., page 282, and the opinion is by Judge Shíras.

Adjourned to Wednesday, April 5, 1911, 9 o'clock A. M.

CHATTANOOGA, TENNESSEE

WEDNESDAY, APRIL 5, 1911

NINE O'CLOCK A. M.

Court met pursuant to adjournment.

Appearances: Same as before.

ARGUMENT ON MOTION FOR PEREMPTORY INSTRUCTIONS CONTINUED.

The Court: You may proceed with the argument in the case on trial.

Mr. Sizer: If your Honor please, I think it fair to adverse counsel to call attention to another case that we have on the added ingredient question. It is decided by Judge Russell in the United States Circuit Court for the Eastern District of Texas, a suit brought by the Coca-Cola Company against the Pure Food Inspector of Texas to enjoin him from interfering with the sale of Coca-Cola in the State of Texas, and we have a certified copy of the bill and answer in that case which shows that it was alleged in the bill and admitted in the answer that the caffeine in it was put in it in the process of manufacture in the resultant compound called Coca-Cola.

Now, it was contended by the complainant in that case that that was an added ingredient and on the bill and answer the judge granted an injunction restraining the Pure Food Commissioner from undertaking to interfere with the sale of Coca-Cola under the Texas Pure Food Law which is identical with the National Law.

The Court: Is the Texas law cited?

Mr. Sizer: Yes, we have a copy of it.

The Court: Well, I asked for authorities about a week or ten days ago and you said there were none.

Mr. Miller: That is not an adjudication at all; it is only a preliminary hearing and not an adjudication.

The Court: Well, that is a matter for me to consider. I am very regretful to have cases submitted to me at this late date instead of earlier.

Mr. Sizer: We should have submitted this. The fact is that we had so many other things in our minds that it did not occur to us at that time. I will pass this to Mr. Miller. Have you got a copy of it, Mr. Miller?

Mr. Miller: I have not a copy. I understand there was such a case and that it was on the question of a local corporation.

The Court: You may proceed.

Mr. Sizer: In addition to the authorites I submitted to your Honor yesterday on the misbranding feature, that is as to whether or not the use of the name Coca-Cola was of itself a representation that there was anything in the product derived from the coca leaf and cola nut, I have the opinion of Attorney General Bonaparte on the ques-

tion of whisky, that is brands compounds and imitations thereof—

The Court: Which opinion is that?

Mr. Miller: F. I. D. 65.

Mr. Sizer: He says that the primary purpose of the Food Law is to protect against fraud, and that as an incidental or secondary purpose it seeks to prevent or discourage the use of deleterious substances. That it tends to discourage it because it requires certain substances to be stated—first, that when a man goes to buy an article or purchase an article that the food or drug shall contain nothing different from what he intends to buy—and I will read from the case. (Reading.)

And the Mapleine case.

The Court: I am familiar with that.

Mr. Sizer: The facts in that case were based on the proposition that the Government said that the word Mapleine—that the suffix "ine" in the word Mapleine indicated something coming from the maple. They introduced a number of witnesses who testified that as they understood in the trade, whenever an article has that sore of a suffix it means the article is derived from a substance or food product which constitutes the principal part of the name.

Now, the court said even in that case if this was a distinctive name although it involved a limitation as to the constituents of the product, the defendant was permitted to use it—

The Court: What is the number of that Food and Drugs judgment?

Mr. Miller: 163.

The Court: I have not that here but I have read it before.

Mr. Sizer: I will call your Honor's attention to a statement of the court in the course of the trial of that case.

The Court: Has any one an extra copy of that 163? I want to get a copy of it.

Mr. Miller: We have two and I will loan your Honor one.

The Court: I would like to get one to keep.

Mr. Hirsch: I would be glad to let you have it.

Mr. Sizer: Some question arose in the trial of the case as to the effect of these regulations made by the three secretaries for the enforcement of the law.

The court says this: "The latter part of the rule"—that is, the one which refers to the fact that no misstatement shall be made as to the place of manufacture, and so forth—

The Court: What do you cite that Mapleine case for?

Mr. Sizer: On this point, that although the Government said in there—although they proved by a number of witnesses that the word "Mapleine" indicated to the public that the food product known by that name was derived from the maple, as a matter of fact it was made from the corn cob. The court charged the jury that it was a distinctive name and that the defendant was entitled to use it. I will read your Honor what the court said on that point.

The Court: I did not understand it that way. I understand that the court charged they might take into consideration the question of whether it was a distinctive name and determine whether any of the circumstances showed that the public was misled.

Mr. Sizer: When your Honor reads that charge in connection with the testimony—

The Court: : The court charged on page three that another question which they should take into account was whether it was known as an article of food in its own distinctive name—

Mr. Sizer: On page four, at about the fourth or fifth line, the court says: "If you believe that Mapleine has been on the market for a sufficient length of time and has been sufficiently advertised so as to become generally known to the public as to the article containing no maple syrup but only a maple flavor" and then stated this in the question, whether it was deceptive.

Now, here is what the court said in the discussion of the regulations of the Secretary:

"The latter part of the rule certainly goes beyond the force of the statute. The latter part of the rule is that a distinctive name shall give no false meaning as to the characture or place of manufacture."

The Court: From what are you reading?

Mr. Sizer: From the record of the trial of the Mapleine case. It is not in the printed record. Now, the court says "Now, that is clearly beyond the purpose of the act because a name may give such a false meaning and still may become a distinctive name undoubtedly; that is, may become to mean something that is so distinctive that nobody is deluded or deceived."

Your Honor will perhaps recall that in the Canadian Club Whisky case, the Government contended most strenuously that there could not be a distinctive name based in any way on the constituent elements of a food product, they said it must be an arbitrary name and without reference to what was in it.

The Court: The Attorney General holds otherwise,

though.

Mr. Sizer: In that particular case. He said you might take a compound name, the constituent parts of which were well-known names and applied to other articles and by putting those two names together in a way in which they had never been associated before and applying that to the compound product would get a distinctive name in that way.

The Court: I do not remember that he went hardly that far. He was just talking about Canadian Club Whisky.

Mr. Sizer: He said: "Canadian Club Whisky is, therefore the distinctive name of a whisky so called; that name distinguishes the product to which it is attached from all other whiskies and clearly identifies it as the particular kind and brand of whiskies made by Hiram Walker & Sons (Limited) at Walkersville, Ontario. The name distinguishes the particular goods in relation to which it is used from other goods of a like character belonging to other people."

The Court: I understand that but I understood you were saying that the Attorney General said in that opinion that a man might make two real substances and compound them into a trade name that did not contain either of them.

Mr. Sizer: The result of his hold necessarily involved that. He did not say that in so many words, but that is undoubtedly the import of what he did say. Now, I quote from the brief of the defendant in that case:

> "It is the combination of words which makes the name distinctive, not the arbitrary or fanciful character of the separate parts."

And then he quotes from the American and English Encyclopedia of Law as follows:

"Mere length in a collection of words not peculiarly arranged, and purely descriptive, does not make it a valid trade-mark. But if any one or more of the words used be arbitrary, it will support the use of other words which are either geographical or descriptive, and the combination as a whole will constitute a valid trade mark or trade name. The combination of words is a very common form of valid trade-mark, and the combination may be sustained though the elements taken separately are not capable of exclusive appropriation. Upon the other hand, the appropriation of a word in one combination does not prevent it being used in other combinations not likely to deceive."

The Court: The material point is whether the words "Coca-Cola"—with a dash between them—indicates that

there is any coca or any cola in it; that is the material question. I will ask the Government counsel to state at the proper time what they think it indicates. Does Coca-Cola mean that the coca leaf and cola nut is in there, in its entirety, or that the essence of coca or essence of cola is in there?

Mr. Sizer: On that, our point is that in the absence of proof tending to indicate what those words would mean in the compound, something in the nature of the proof in the Mapleine case, the jury could not speculate as to it.

The Court: Would not that be a question purely of a character to go to twelve men supposed to represent the average sense of a community, and would not what they would understand be about what the general citizens would understand? Is not that a question for a jury of average understanding?

Mr. Sizer: In view of the fact that there is such a vast multitude of distinctive names that have no reference to the constituents of the compound, I submit that the mere fact that a name of that kind is used does not afford any evidence whatever that the manufacturer intended to represent that there is anything in the compound derived from the substances on which the name is based, and that was evidently the view taken of it in the Mapleine case and the Government attempted to prove what those words would signify to the public.

The Court: I suppose your contention is that the test of whether those words or the pictorial representation on the label are deceptive, in the effect it would have upon the average man of ordinary understanding and not upon the expert? I suppose you rely upon the opinion of Attorney General Bonaparte?

Mr. Sizer: Yes, what effect it would have on the people who but it, upon the public. Now, suppose, to illustrate something near at home that the manufacturer of this product twenty years ago called it Oak-Hickory, well-known trees known to everybody. If he had represented that that substance was composed of the essential elements from the oak and hickory trees, that would be misrepresentation, unless it did contain those things. But the mere use of that fanciful name of two names that do not represent anything to the public but with which the public were familiar—that the use of that name would afford no evidence that the manufacturer intended to mislead the public with respect to that product, and the fact that they had oak leaves and hickory leaves around the keg would not change it. That is merely a representation. And it is clear here that the use of a pictorial design was

not intended to deceive the public, the public did not see it, it was simply on the barrels, and the man who buys Coca-Cola at the fountain buys it because he wants that particular product known by that particular name without reference to what is in it.

Now, as to the question of whether there is any appreciable substance from the coca leaf or cola nut in the product, I take it that would be a question of fact, although it seems to me inasmuch as several witnesses—practically all the witnesses who testified to the process of manufacture—say it does go in there, the mere fact that some of the witnesses for the Government say they cannot detect any in the compound that they could trace to the coca leaf or cola nut, would not be evidence to go to the jury if they find there was any coca leaf or cola nut.

The Court: The cola nut is not in the case. The libel says there was little if any. I have ruled that question out.

Mr. Sizer: Now, a word about the elimination of cocaine. The undisputed evidence on that point is that the cocaine was never part of the formula. It was never known to be in this compound until the testimony in the case of the Coca-Cola Company against Rucker developed through Doctor Crampton that there was a small trace.

The manner in which that got into is that they undertook to decocainize the leaves at the factory—

The Court: I don't see that that cuts any figure. If you have built up a distinctive name on the compound in the last ten years without cocaine, that raises your question without regard to what was in there before that, in my judgment.

Mr. Sizer: We wanted to go further and say that the elimination of that part of what was not an appreciable amount was not any adulteration or alteration of the substance itself, and therefore it would not constitute any change in it such as would interfere with our right to use that name and put that product on the market under that name.

The Court: After that question, it would probably be a question with the jury if the question were material whether there was sufficient cocaine in there before the change was made to have a material effect upon the ingredients by taking it out. I should regard that as a question for the jury.

Mr. Sizer: That would be so if anybody testified to it, but even Dr. Kebler said that whatever cocaine was in there would not produce any appreciable effect so far as he knew, and there was no evidence that it would produce

any appreciable effect.

Now, there is a case in 132 Michigan to which I want to refer without reading.

The Court: What page?

Mr. Sizer: Page 632.

In that case they took out an unimportant ingredient and for the purpose of improving the mixture, put something else in, and the Court held that was not an adulteration and the article is still unchanged.

The Court: On what do you cite that?

Mr. Sizer: On the proposition that if cocaine was an undesirable element and present in a very small quantity, as shown by all the proof and to improve it and make a better article not obnoxious to the law they took out that inappreciable amount of cocaine, that would not be an adulteration and would not affect their right.

The Court: If it was unappreciable, it had no effect one way or the other. If it was appreciable, of course taking out the cocaine would distinctly change the character of the article.

Mr. Sizer: Yes, but there is not a syllable of testimony that it was appreciable. On the contrary, Dr. Kebler admits that he is not able to say that it was appreciable.

The Court: As I say, if that becomes material, that will be a question for the jury.

Gen. Cox: Does your Honor want to hear from the Government?

The Court: I think you had better present your views. This is a very serious question, and I want all the light I can get on it.

The first question on which I would like to hear from you is as to the meaning of the word "added" and what the Government contends is the substance adulterated by the addition of caffeine.

Does the Government say that the coca is adulterated by adding caffeine or that the cola is adulterated by adding caffeine, or that Coca-Cola is adulterated by adding caffeine. The libel claims that Coca-Cola is adulterated by the caffeine, and if you cannot have Coca-Cola without caffeine, how can you adulterate it by adding caffeine to it. That is the trouble I have.

Gen. Cox: The section of the statutes which refers to that part of the question involved, we find—

The Court: I am thoroughly familiar with the statute, I think.

Gen. Cox: I just want to refer to it and use the words to give the Court our construction of it. Under Section 8, the 4th clause.

The Court: You mean Section 7?

Gen. Cox: Yes, that is the wrong one that I referred to. It is under Section 7 and the 5th clause and also under Section 8 and the 4th clause. Taking the two together, we are of the opinion that the word "added" refers to poisonous or deleterious substances. You will see by reading the 4th clause of Section 8 that after it says "if the package containing it shall bear any statement design or device regarding the ingredients of the substances contained therein, which statement, design or device shall be false or misleading in any particular" it goes on provided that an article of food which does not contain any added poisonous or deleterious ingredient shall not be deemed to be adulterated or misbranded in the following cases, and, and that is where counsel for the claimant go astray or get in the field as Mr. Williams said. If I can differentiate in the mind of the Court what we conceive that to mean, that is this; that you cannot add any poisonous or deleterious substance, which I suppose would infer in these cases that you can add things which are not poisonous or deleterious which question probably was considered in the Canadian Whisky case—

The Court: There is no doubt about that proposition, but what do you mean by added?

Gen. Cox: It means that which is a part of the compound.

The Court: But now suppose that you sell a compound of salt and strychnine under the name Salt-Strychnine. Do you say that the strychnine is added? It would not be a compound of salt and strychnine unless it would contain the strychnine.

Gen. Cox: If it is claimed by the claimant that they can put one part of the article in the compound and not say that the remainder is added—just take figures. Add up a column of figures, the first figure that is put down is not added. In this case it might be possible that caffeine is the principal ingredient in this compound, but as to whether it is added or whether the other is added to it seems to be a question that answers itself, that they are all added. For instance, if you take 1.21 per cent and say that it is not added to the 98.79 to make the 100 per cent, that would be drawing the matter very fine.

The Court: Don't your argument lead to this, that if the compound contains a poisonous or deleterious ingredient, it cannot be sold without violation of the Act. Suppose a druggist puts up a compound and labels it Salt-Strychnine—

Gen. Cox: But that comes under the Act that applies

to drugs. A druggist can sell drugs that have poisons by putting it on the label.

The Court: No, he can't. There is something said about that certain poisonous drugs must be stated on the label.

Gen. Cox: This is a drink and it is not a drug, but it comes under that part of the statute which refers to food, not saying it is a food, but it comes under that part of the statute which regulates the sale and the mixture of foods. Reading Section 6 you will find it does not come under the law which governs drugs, but under the law which governs food, and there is quite a difference between the application of the law there under Section 6. That refers to drugs, and the one which applies to foods. I do not mean to be understood as saying that that is a food but it comes under the law which relates to and governs food, so that the part I want to refer to and keep from being confounded or getting our minds mixed on the question is that we refer particularly to that part that applies to food as provided for under Section 6 of this Act.

Gen. Cox: Now, if your Honor please, when we take up the question of added ingredients—

The Court: Suppose you have a food mixture or a compound that is advertised as a compound of vinegar and acetic acid and which is labeled as a compound of vinegar and acetic acid, would you say the acetic acid was an added deleterious ingredient, assuming that it is deleterious? Could you say it is added to that compound if you sell it as one compound of vinegar and acetic acid?

General Cox: I should say if it contained a poisonous and deleterious ingredient, it would be.

The Court: How would it be added?

General Cox: Because it is added.

The Court: Well, there is prussiac acid in peaches but that does not make it an added ingredient.

General Cox: But, your Honor, Mr. Heyburn said in that connection—

The Court: I have read that—I have read all of that.

General Cox: I think that answers the question. He says this bill in using the word "added" was intended to go no further as to health of human beings than under the law of nature in the consumption of nature's products—that is the way "added" is used. It is put in the product and you add to the combination a single substance, it is an added poisonous substance. Then these are the words—

The Court: You say in your libel further that the product Coca-Cola is adulterated by adding caffeine.

What is adulterated by adding the caffeine to it, what is the original substance?

General Cox: A substance that is adulterated.

The Court: A compound cannot be adulterated by adding something to it, putting something in it that is essential to it. You cannot adulterate a thing by adding something to it which is essential to its very existence.

General Cox: You see, the compound was made of different parts.

The Court: You have charged in your libel they have adulterated Coca-Cola—that they have sold either coca or cola, and that they have adulterated Coca-Cola. Now, if Coca-Cola is a compound consisting of caffeine, how could it be adulterated by adding because it has caffeine in it? How is the caffeine added to it if it is a part of it?

General Cox: I cannot make myself any plainer understood by the Court than to say if caffeine is in it, it is a part of it and it is the thing that makes it adulterated. It is a question as to whether or not that is poisonous or whether or not it is deleterious, the question as to whether it is deleterious is the whole matter—if it is in it I can't conceive in any other way in the world but what it is added to it, it is not a natural substance.

The Court: You treat it as if the word "added" indicated it contained deleterious or poisonous substances—

General Cox: I didn't mean that exactly.

The Court: That is what you said.

General Cox: That is a compound which has this deleterious or poisonous substance in it—the question of whether it is deleterious or poisonous is a question as to whether it is added.

The Court: Then you say if a compound or food contains a poisonous and deleterious ingredient, then it is adulterated if it contains it, leaving out the word "added."

General Cox: If it is a mixture—that is, if it is a man-made substance, if it is a compound or substance that goes on the market other than the natural ingredient, I would say if it has in it a poisonous or deleterious substance it is added.

The Court: But where do you get any justification for the distinction between the word "added"—the distinction in the word "added" as between the natural compound article—

General Cox: The Statute states that.

The Court: Well, in California the apple is not adulterated because it has boric acid; it is a part of it and not added to it, and the fact that the apple contains boric

acid does not make it an adulterated article. Where do you get anything in the Statute that indicates that the word "added" applies to natural articles and not to a compound?

General Cox: That may be explained in the language of Mr. Heyburn.

The Court: I have read that. I understand his views. I want to get something from the statutes that draws a distinction.

General Cox: I wanted to read that to show your Honor the difference between a natural thing and a compound thing.

The Court: I understand the difference between a natural thing and a compound.

General Cox: This is the only thing I can direct your attention to immediately. It says any article of food which does not contain an added poisonous or deleterious ingredient shall not be deemed to be—etc. I do not know that I can make it any plainer to your Honor's mind.

The Court: It seems to me from what you say that it means nothing. You want to construe the Act as if the word "added" was not in there.

General Cox: If this is purely a caffeine article why not call it Caffeine, and why should they be allowed to call it Coca-Cola? If it is caffeine alone and has nothing but caffeine and a little water and some other matters mixed with it, it should be called Caffeine and should not be called Coca-Cola. I cannot understand that it can be added one way unless it is added the other, whether a deleterious or poisonous substance—and that question of a deleterious or poisonous substance is the prime question in this case. I think it is a question that should go to the jury on what they think about the matter as throwing light on the question of whether it is added or not.

The Court: As to whether or not it is deleterious, I think the evidence is such as to make it not a question of law for the court but a question for the jury, if we reach that point, but my trouble is—how are you going to reach that question?

General Cox: I might throw some light on this from another phase—that is, whether in reference to the distinctive name of this article, that gives them any right to sell this product. Mr. Williams asked me the question and he said that they had a right to sell under the distinctive name as he claims in his argument, that there is no proof that there was no such an article or product as coca or cola and he asked me to find in the record where there was any reference to prove in this case as to coca or cola

prior to the time they used these words coca and cola. I suppose he meant for such reference as coca and cola.

The Court: I do not think that question material.

General Cox: Then if that is not material I will answer the question by saying that Doctor Rusby said in his deposition—

The Court: I do not think when the words coca and cola got into general use is material in this case. It is the question of the fair meaning of it at the time of this libel—at the time of the seizure.

General Cox: It is a question of what?

The Court: So far as the matter of misbranding is concerned the question of the fair meaning of the words coca and cola, what those names fairly implied at the time of this seizure. It is not a question when they got into use.

General Cox: If you do not want me to answer that question,—he asked it. I refer to Section 246 where thousands of pounds in 1886 were used—I believe that is all I care to say.

Mr. Miller: May it please your Honor, it is my time next to be pounded with interrogatories.

The Court: Yes, I am very liberal with interrogatories. I find it brings the matter more to issue probably more clearly than any other way. I know counsel want to know what they have to meet.

Mr. Miller: I want to say on the reading of the Statute myself, a reading of the Statute alone without more, without considering the utterances of the giant minds of the nation at the time it was passed in connection with it, and in such connection as I believe the courts have universally held, we may consider such utterances to determine the intent and meaning of the law, that I find no distinction between what might be, or what rather was termed to be at the time the Statute was passed originally, substances, those which are secondary or artificial substances as respects this word "added" which appears to be giving your Honor some trouble. If we may look, however, into the motives which actuated the passage of the law, and I think we may, and to the utterances that were made at the time, that is, such utterances as the Court has held we may consider—and then interpret the law in the light of those utterances, I think there is a clear distinction drawn as to the use of this word "added," as to why it was inserted originally.

Why, when Sentor Foraker undertook by amendment to limit it, the amendment was voted down,—just what it means. I understand in that connection as your Honor

has indicated, that there was a general acquiescence in the doctrine that reports of the committees might be looked to and remarks of the chairman who had charge of the bill might be looked to, and that the legislative journals might be looked to for the purpose of determining—and I might say, indeed, the history of the times as a United States Supreme Court has said—

The Court: The extent to which the legislative journals may be looked to to show the votes that were taken, not to show any remarks that were made.

Mr. Miller: Yes, to show the amendment was overruled, that it was offered and voted down, and the United States Supreme Court went so far as to say that we might look to the history of the times, but what they meant by the history of the times or how it might be proper for the Court to take judicial knowledge of it, I am not prepared to say.

The Court: That was in the Trinity Church case.

Mr. Miller: Yes. Without looking to the history of the times, but only as to the introduction of the bill and its passage through the House and the Senate, I call your Honor's attention to what I consider to be the remarks made by the chairman having in charge this bill in response to interrogatories as to what was meant by the word "added" where the application of the word is made direct to mixtures and compounds but it is not made and it is not intended to apply in the case of the original substance like the apple or the peach unless it be brought in contact with the apple or peach, but as to mixtures or compounds the word "added," as I think, is clearly shown by these utterances means every ingredient that went into the mixture and compound.

The Court: As I said, I have read those carefully. If there is any particular part you wish to call my attention to I would be glad to hear it. I do not care for the general statements. You have kindly furnished me with this copy and I have read it over.

Mr. Miller: Yes. There is very little of it I care to refer to and that is Mr. Mann's statement; I do not know just where it is there but it is 9181—your Honor said that one side relied on Mr. Mann's statement and another on Mr. Heyburn's. They are about identical and in accord, I think. When Mr. Mann was questioned about it, here is what he said—

The Court: Is that the typewritten copy?

Mr. Miller: I do not know what portion it appears on; it appears in the Congressional Record, Vol. 40, Part 10, Page 9181, and in speaking of this bill he said: "The

bill does not require the quantity of the ingredients to be stated in the vended materials unless"—

The Court: (Interrupting) They were speaking specifically with reference to the clause stricken out as to whisky. There is a good deal of that language which is applicable to whisky.

Mr. Miller: He was questioned as to what an added ingredient meant.

The Court: As used with reference to whisky.

Mr. Miller: I do not think he was doing that from an illustration that he gave because here is what he said "The bill does not require the quantity of the ingredients to be stated in the vended materials unless as in the case of narcotic drugs but forbids the introduction into any food of articles which are deleterious or injurious to health or which conceal the bad quality of the article." Now, it does not purport to say that if a man makes a breakfast food partly of corn and partly out of wheat, he shall state the proportions of each. I do not recall the exact test but I do not think it has any reference to whisky, but he was talking about foods there, pure and simple. In this distinct statement by the chairman of the House Committee, in charge of the bill, except in the case of narcotics the phraseology of the bill with the word "added" therein was to prevent the introduction of anything into food articles which is deleterious.

The Court: If that it what they meant, doesn't it seem that they use very intricate language to express it?

Mr. Miller: They debated for quite a while as to proper language to use there, and that is what they said.

The Court: Does that particularly limit the meaning of the word "added" when applied to a compound?

Mr. Miller: As applied to a compound I am not prepared to say. He puts it on this construction—every ingredient added—and they had to get something that would harmonize. And when they would determine as to what phraseology would best express the distinction they attempted to draw between a food or substance in its original state which was not to be made deleterious, and mixtures or compounds, they use the word "added."

The Court: Well, that purpose could have been so easily explained by very simple language, that any substance should be deemed adulterated which contained any poisonous or deleterious substance or ingredient, except the natural article sold under its distinctive name, and the use of this very language is so indefinite and so difficult to reconcile that that gives me some trouble.

Mr. Miller: To show that—but not binding on your

Honor, that is exactly the construction this law has received by the secretaries when they came to formulate the rules and regulations for the enforcement of this law, and they distinctly stated in one of their regulations that any food product—that is regulation thirteen—any food product which contains naturally a poisonous or deleterious ingredient does not come within the provision of the Food and Drugs Act except when the presence of such ingredient is due to filth, putrefaction, decomposition, etc. And, of course, as I say, that is not controlling, that is merely a conclusion that the secretaries came to when they came to make up these regulations.

The Court: Read that over.

Mr. Miller: In Regulation thirteen it is provided that any food product which contains naturally a poisonous or deleterious ingredient does not come within the provisions of the Food and Drugs Act except when the presence of such ingredient is due to filth, putrefaction or decomposition, so that—

The Court: You could, according to that, make a combination of two natural products which contained each of them, deleterious substances.

Mr. Miller: I do not think you can under this law.

The Court: Under that definition, I mean.

Mr. Miller: That definition—no, sir, I do not think so, because they meant to exclude just such combinations because it is stated that this product—any product which contains naturally poisonous and deleterious ingredients does not come within the provisions of the Food and Drugs Act.

The Court: Well, suppose peaches and apples, each containing deleterious substances naturally, are put in combination, the result is a compound which contains naturally poisonous and deleterious ingredients.

Mr. Miller: They contain it naturally.

The Court: Combining the two, is it still a natural ingredient?

Mr. Miller: The poison that was there was there naturally, as a natural ingredient originally. I should say yes.

The Court: Your argument would be under this law you cannot combine them but that you may sell two natural articles, each of which contains poisonous ingredients, without violating the law, but you cannot combine them in one article which contains both and the same poisonous ingredients?

Mr. Miller: I am not prepared to express an opinion on that but I do not think we are compelled to face that in

this case.

The Court: I asked that because I want to see what the sound construction of this language is; I am hunting some construction that reconciles this language and makes good sense.

Mr. Miller: To start with, the Government in this case has shown that caffeine was added to this product.

The Court: That is a question about which there is the very gravest doubt, if you use the word "added" within the meaning of the Statute. It is shown that caffeine is in the product.

Mr. Miller: In greater proportion than it appears in the cola, that is the point.

The Court: Yes.

Mr. Miller: If this were merely a combination of caffeine substances and coca substances in the relative proportions that those ingredients appear naturally—

The Court: I have not worked that out. I suppose you are right about that; I meant to inquire about that. Suppose a compound was half extract of coca and half extract of cola, how much caffeine would be in an ounce,—how much caffeine would be in an ounce? Suppose it had no chocolate or simple syrup or anything else.

Mr. Miller: I really will have to call on someone else to figure that out.

The Court: It might be put on the basis if it contains nine-tenths of coca and one-tenth of cola—if it contained any appreciable quantity of the extract of cola—I am not sure that you could not work that out, it might show that it would contain as much caffeine as is in Coca-Cola syrup. I would like to have figures on that and like to have it worked out.

Mr. Miller: I am informed and I know it to be a fact if I know anything from this proof that there is no caffeine in coca.

The Court: The proof shows that.

Mr. Miller: And in cola I am informed that if it were one-half, or, indeed, nine-tenth constituents of cola, there would probably be not as great a proportion of caffeine even then as appears in this mixture.

The Court: I say, I would be glad to have it worked out. Work it out on the basis of coca and cola, one-tenth coca and nine-tenths cola, that will give an appreciable quantity of coca, and see how much caffeine would be in an ounce of that fluid extract.

Mr. Miller: I will ask the doctor to do that. The Government has proven undoubtedly that there is more caffeine contained in this compound than is derived from

the cola that enters into it and that it is caffeine that is introduced from an outside source.

The Court: There is no doubt about that proposition, that it is introduced from an outside source—caffeine is.

Mr. Miller: Now, your Honor asked me further with reference to a combination of apples containing natural substances, deleterious substances, and peaches; that might contain a limited percentage but in natural combination. That was one of the very things that was so carefully debated in Congress where both chairmen were interrogated as to the natural combination, and in each instance they gave samples, as wheat, barley, and all those things and said you could extract poisonous substances from them, but that you could not take that substance, if it was extracted, and put it into another mixture—

The Court: I will tell you my impression as to those things. They do show, undoubtedly, that they did intend to treat natural poisonous ingredients that were in natural articles not in violation of the law, but I do not find in the debate from either Chairmen or the committees that their mind was directed to the problems that we have here. It does not seem that they thought about the application of the law to an article of this sort. I do not find any expressions of either chairman, anything that indicates anything about it. They evidently did not think about it, and I do not offer that in support of any criticism of the drafting of the Act. In drafting an Act one cannot see everything that will come up, and this combination or artificial combination did not enter into their minds; they were thinking of natural products like the apple—they were thinking of a product like whisky that had certain constituent combinations, as you know, but they were not thinking of something made up artificially.

Mr. Miller: With the greatest respect for your Honor's view after having read these excerpts, it does seem to me when the House and chairman, whose views were so confidently placed on yesterday by adverse counsel—gave as a circumstance breakfast foods, certainly they were considering something else besides whisky.

The Court: Who was that?

Mr. Miller: That was where he said that the object of the bill was to forbid the introduction into any food articles which are deleterious or injurious to health. Now, in that connection he spoke about breakfast foods and it appears to me from Mr. Mann's statement in that connection that he stated that the bill did not require the quantity of ingredients to be stated except in narcotics, but he further said in the same connection that it forbade the introduc-

tion of articles which were deleterious in food products. Now, introduction means to put them in artificially, of course, because they have talked about natural articles—and when I speak of introducing them I mean as a surgeon or physician introduces something into the anatomy—as distinguished from the natural way.

The Court: It seems to me that the language is capable of construction—that the Chairman had in mind that you were not to introduce into any article of food, any natural article of food, any deleterious ingredient that was foreign to it.

Mr. Miller: Natural article of food—

The Court: He goes on to illustrate by wheat and corn and his illustration shows there he had that in mind.

Mr. Miller: Your Honor will bear in mind—

The Court: That is the way I take it.

Mr. Miller: Your Honor will bear in mind they passed Section Six of that bill which had defined food and he was not talking about food products—they had passed food products and they had defined them in that Act and the consideration in this connection evidently—they had defined a food product and told what it was, simple, mixed or compound.

Now, then, when he comes to talking about introducing into a food product an ingredient which is deleterious to health, how can it be said that when they had defined food products as being natural and artificial both, that that word "introduction" is made to apply only to natural substances?

The Court: I do not think it is meant to apply to natural substances—I can give you an illustration of what an added ingredient to a compound which to my mind would be fairly within the law. In other words, suppose the Government had proven in this case that the compound Coca-Cola had never contained caffeine, that they had been selling a compound of caramel, phosphoric acid and sugar and water—that it had never contained caffeine and that they suddenly began to put caffeine in it and that they had introduced into this substance Coca-Cola a new substance known as caffeine. In other words, that would be adding caffeine to Coca-Cola because caffeine is not a part of Coca-Cola and was not a part but they added caffeine, then the Government would unquestionably have had the right to say that if that caffeine was deleterious or poisonous that was an added ingredient to Coca-Cola.

Mr. Miller: It seems to me, if your Honor please, that goes back to the principle that is relied on here by way of combination—that is, distinctive—and furthermore pre-

ceeds on the assumption that before the claimant can be brought within that exception, it must establish that its compound contains no added deleterious or poisonous ingredient.

The Court: In the libel you say that Coca-Cola is adulterated with caffeine. What is adulterated?

Mr. Miller: We say the entire mixture is.

The Court: A mixture cannot be adulterated by one of its own constituents.

Mr. Miller: That is where, perhaps, we hold somewhat radically different views. We think a mixture can be adulterated by one of the ingredients being a deleterious or poisonous substance, and that as evidence of that fact, the law-making power, when it comes to more powerfully poisonous substances, expressly provides without different limitation at all that the particular quality of this more powerfully poisonous substance should be written out and put on the label, and yet that distinction that your Honor draws or that is suggested by adversary counsel, finds no support in the discussions on that question.

The Court: Don't you think your label would have been demurrable if you had alleged that one of the constituents of Coca-Cola compound was caffeine, and you had omitted the word "added" instead of saying that it was added that that was one of the constituents?

Mr. Miller: I don't think so.

The Court: Then if you had left the word "added" out, under what section could you have maintained your libel—don't you have to allege that it was added?

Mr. Miller: The claimant must bring it within the exception.

The Court: Don't you have to prove that it is added to this ingredient—that the ingredient is added to this compound, and don't they have to show that it is not an added ingredient to the compound but that it has been a constituent element of the compound, that it is now and always has been.

Mr. Miller: Because they have used it that way, there is no iron-clad formula about it requiring that. That is what they are relying on in confession and avoidance. If we had alleged pure and simple that they had been making Coca-Cola and had taken the cocaine out at a certain time, if we could have gone further and said, which I think this Law justifies us in doing, that one of those ingredients they had been putting together and selling to the public is a deleterious and may render the product injurious to health, that would have made a clear case of complaint by the Government and would have warranted

the seizure.

The Court: But you don't aver it that way. You averred that it contained an added ingredient, caffeine.

Mr. Miller: And we inferred it was deleterious.

The Court: But you aver that caffeine was an added ingredient.

Mr. Miller: And by that we meant it was the one thing that went to make up the mixture that was added to the whole. Now, I know your Honor is not playing with words, but if this were a play on words pure and simple, if we were to go back to the foundation, we find from the foundation that the first that is done is to put something else in the mixture, and to keep adding until caffeine comes in.

The Court: The question of which goes in first is utterly immaterial.

Mr. Miller: I think so.

The Court: The only question is whether or not the ingredients can properly be said to be an added ingredient to an artificial compound when it is especially an ingredient of the compound and has always been an essential ingredient of it.

Mr. Miller: Now, let us see about that.

The Court: I suppose there is no dispute about the fact that caffeine is an essential ingredient of the Coca-Cola compound, that is would lose its characteristic property if it did not contain caffeine. There is no doubt about that.

Mr. Miller: I don't think there is any proof about that.

The Court: There won't be any difference on that point. I think everybody agrees to that.

Mr. Miller: I don't know so well about that that. I don't think there is any proof on that point.

The Court: Well, I will hold that.

Mr. Miller: Well, assume there was, all classes of people stand on an equal footing before the law. Any other construction than that each ingredient is added to each other ingredient seems to me to put on a wholly different footing before the law and before the Courts of the country that manufacturer that was engaged in making up a syrup and selling it to the public before this law was passed in which he put the most vile and deadly poison and that manufacturer who desires to employ aniline or some other poison in manufacturing products after the law was passed.

The Court: Congress can remedy the law if they want to. I am only concerned in the construction of this pres-

ent law.

Mr. Miller: But your Honor will look to see whether Congress intended to draw any such radical distinction as I think, between the class of people engaged in the manufacture at that time, and those who have sought to engage in it since. One company could employ caffeine as much as it liked at the time the law was passed, if this word "added" does not mean what we say it means, that every ingredient put into an artificial mixture is an added ingredient, and another manufacturer engaging in business the next day after the law was passed, can not do it. That is the potent substance in favor of the Government contention here.

That is my argument here, that claimant's argument would allow a manufacturer that was engaged in making up a mixture to continue in business, if he had been engaged before the law was passed making his artificial compound or blend, and a man that was right alongside of him that was putting, for instance aniline dyes into cherries, would be placed on a wholly different footing.

The Court: No, the same thing would apply. The same thing would allow him to start in as far as adulteration with any other different compound with an ingredient that was deleterious, but not to have anything misleading in the brand. He could start in with the new compound containing a deleterious ingredient and yet it would be difficult to see how it was adulterated if he gave it a fanciful name, but he would have to put on the package what it contained.

Mr. Miller: My point is this, the Coca-Cola Company were engaged in using caffeine. Here is a man making aniline dyed cherries. If it be true that each and every ingredient in the mixture of a compound is not an added ingredient, the man making the Coca-Cola will say I will continue to employ caffeine and the aniline dye man, in making his product, is forbidden, according to the suggestion made by your Honor from continuing the use of the aniline dye in connection with the cherries, because it it an added ingredient.

The Court: But cherries are a natural substance and aniline dye is not, and that is added to the cherries.

Mr. Miller: Then apparently, these classes of manufacturers are put on a wholly different footing, if any other contention than that of the Government in this case to obtain, because it would put one out of business and the other could continue.

The Court: The difficulty is that Congress does not seem to have made any provision applicable to compounds,

but that is not the fault of the Court. It may be the fault of the Court if it misconstrues the language of the law, but if that is omitted, that is a matter for legislation.

Mr. Miller: Now, we are not quite done with Mr. Mann, yet. Mr. Mann was asked by Mr. Gaines of our own state, I have not got the page before me but he was asked:

> "Mr. Gaines of Tennessee. Will the gentleman from Illinois tell the committee how he proposes to remedy the evil that he spoke of a while ago about the aniline cherries? That seems to be a pretty dangerous dose.
>
> "Mr. Mann. We forbid the use of these adulterants in the bill.
>
> "Mr. Gaines of Tennessee. Now, what language is used as to that?
>
> "Mr. Mann. The first is the adding of deleterious substances and the second is the adding of anything which conceals the inferiority of the article. Either one of those would cover aniline dyes." (Con. Rec., Vol. 40, part 10, p. 9185.)

Now, of course, if that is meant the adding of deleterious substances to natural substances, then I am in error.

The Court: The question was how they proposed to remedy the evil about the aniline cherries.

Mr. Miller: That was the instance given but it was not the only one because there were various other illustrations made. But after food had been put on an equal footing mixed, pickled and compound had been defined, then he was asked how they proposed to forbid it,—forbid the use of the adulterant, and I think the adding of the deleterious substance consisted in putting them in, and that that would be true whether it was done before or after the passage of the Bill.

The Court: On your theory, it is not the Coca-Cola that is adulterated by adding the caffeine but the coca or cola or the two substances coca and cola that is adulterated?

Mr. Miller: No, sir; I don't think so. I think it should be that the mixture contains poisonous substance by reason of adding caffeine to the mixture, and it makes no difference whether it has been for twenty years or not.

The Court: In other words, you fairly and squarely take the position that as applied to a compound the word "added" has no other meaning and that it is the same as if it contains a poisonous or delterious ingredient?

Mr. Miller: Yes, that is what it leads to, and the reason

for the introduction of the word "added" was to make natural substances simple compound and mixed substances all harmonize, and put the manufacturers of all on an equal footing, and that is clearly brought out, I think as can be when we pass from the consideration in the House where the term introduction was used into the article by Mr. Mann, and come down to what the word "added" meant by Senator Heyburn, and there he began to talk about Nature's substances. Now it will be noted that Senator Heyburn drew a distinction in that body between original substances which he termed more or less of Nature's admixture of ingredients, and secondary substances, which is a thing or mixture as distinguished from original substances. It was said that the grape and wheat and barley and other so-called original substances, were Nature's compositions, while certain poisonous substances might be extracted from them, yet in the happy combination they existed, they were not forbidden by the law. Then he said: "This bill, in using the word 'added' in line 8 page 11, was intended to go further in the threat against the health of human beings than was absolutely necessary under the law of Nature in the consumption of Nature's products. That is the principle upon which the word 'added' is used."

Now, if I interpret that aright it means this, that when you take the original substance, you cannot add to that any more than it contains naturally. If you put anything to it, beyond what it contains naturally, it is an added ingredient. If you take an artificial mixture, you must not put in anything which is poisonous or deleterious beyond the admixture of nature.

The Court: Then you could not make a concentrated extract and sell it on the market if it had anything poisonous or deleterious in it.

Mr. Miller: No.

The Court: It is the changing of the chemistry to which Senator Heyburn seems to be referring. He referred to a compound existing in Nature, now if you take that combination existing in Nature and make a concentrated extract, you have something that is prohibited. Is that your idea?

Mr. Miller: No. There is a provision of law that you can label it and mark it a blend or compound and sell it as much as you like, but when you undertake to sell it as an original substance, you must not put any more poisonous ingredient into it than existed naturally.

The Court: The illustration that Mr. Heyburn used seem to show that his language goes further than was

intended. He was speaking of fusel oil in whiskey and he says that is naturally in the wheat but it is not a healthy thing to take it out and take it as fusel oil, that that is an independent product that will kill because its character is changed, but there is no contention that a man cannot make and sell fusel oil.

Mr. Miller: No, we would have to label it.

The Court: Then you get back to the label. The objection to a combination containing deleterious ingredients is not to the adulteration but the real question is as to whether it is properly branded. Now, if it is misbranded and the label on the combination is deceptive, then it is obnoxious to the law.

Mr. Miller: Undoubedly.

The Court: But it is not adulterated because it contains deleterious ingredients unless you eliminate that word "added" as applied to the compound.

Mr. Miller: When the direct question was put to Mr. Heyburn as to whether every ingredient that enters into a compuond is added, he answered:

> "Mr. Fulton. I am not hostile to this measure, as the Senator knows. It has no stronger friend than I. I intend to vote for it. I should regret very much were it re-referred, but is it a fact that every ingredient that enters into a compound is added?
>
> "Mr. Heyburn. Yes; but there are words of limitation in the bill."

That shows me that he was dealing with combinations pure and simple. He has answered that every ingredient was an added ingredient. The Senate was put on notice of that.

The Court: Where is that language?

Mr. Miller: It is the bottom of page 19 and page 20 of the synopsis that your Honor has. You will find the direct question put to him whether or not every ingredient that enters into a compound is added. Then Senator Fulton goes on:

> "Mr. Fulton. It may be merely an assembling of certain elements and certain ingredients into one whole.
>
> "Mr. Heyburn. Yes; but there is a limitation on the word 'added'. It does not prevent you from adding ingredients to a combination or to single substances; it prevents you from adding poisons or deleterious ingredients; that is all. Those are the words of limitation."

That shows what they thought of it.

The Court: That shows what Senator Heyburn thought.

I do not agree with that.

Mr. Miller: When this question before came up before the giant intellects of the Nation and they were debating it, these satements of the Chairman were made. I don't say they are controlling.

The Court: They are unquestionable persuasive.

Mr. Miller: Undoubtedly and the Supreme Court of the United States has so said.

Now, I want to submit another thought along this line, and that was as to the position taken by the Government in the Hippolyte Egg case that this is a remedial statute and should be literally construed. I don't know whether your Honor has seen a copy of the brief in that case or not, but I have it here, and a large portion of the brief in that case dealt with this particular question, that although this Act was in part a penal act, nevertheless a more liberal construction should be given to it so as to obtain the ends that the law-makers sought when they enacted the bill into a law. The Supreme Court of the United States sustained the Government's contention, and affirmed the judgment below within the last two or three weeks. If there was a written opinion, it has not been handed down.

The Court: I have that opinion, and I don't think it refers to the question or remedial or not.

Mr. Miller: But that was one of the principal questions stated in the brief, as to whether or not this was a remedial statute, and whether or not a liberal construction should be indulged in. Numerous cases were cited in the brief which I could cite to your Honor but I take it in view of the fact that the Government counsel rested their whole case upon the fact that the Act should be liberally construed, and that the decision of the lower Court would have been reversed if the Act had not been liberally construed, it is hardly necessary to pursue that subject further.

The Court: It don't refer to that question in the opinion.

Mr. Miller: No, but one-third of the brief of the Government dealt with the question and apparently the Government rested its contention on that ground, that this remedial statute, although containing a penal clause, should be given a liberal construction, and the defendant contended it should not be given a liberal construction. The Government apparently conceded that if the contention of the appellant was correct in that behalf, the case would have to be reversed, and the case being affirmed, we must naturally assume that inasmuch as the briefs of

counsel dealt with that and that was one of the principal questions debated, it was resolved in favor of the Government contention.

The Court: I should have difficulty in holding that a case decided something that was discussed by counsel in their briefs, when it was not mentioned in the opinion.

Mr. Miller: It appears to have been conceded by both counsel that this Act must be given a liberal construction, else the question the Court did pass on could not be presented to it.

The Court: It is undoubedly true that whatever it be, I am inclined to think it is remedial, and it must be construed with reference to the legislative intent as fairly gathered from it, and no construction will be adopted to defeat that intent, unless required in the language of the Act.

Mr. Miller: That brings us up to the question of the distinctive name, and I should say in passing again, that if we are to give effect to this law and to give it the force and effect that to my mind was intended by the lawmakers, then we must hold that every ingredient that enters into the compound is an added ingredient. One chairman said so and the other, not so clear in his language or rather not so strong, was clearly indicative that that was his understanding.

Now, coming to the question of distinctive name, and that deals with the misbranding of food to a certain extent. By Section No. 3 of the Act certain officials are directed to make uniform rules and regulations for the enforcement of the Act. Now, the deflnition they gave to distinctive name was "A distinctive name is a trade, arbitary or fancy name which clearly distinguishes a food product, mixture or compound from any other food product, mixture or compound." Now I want to submit in that connection that the combination Coca-Cola, whether it be written hyphenated or not, as clearly conveys to my mind as anything on earth can, that there are in that contained the substances known as coca and cola, else what does it mean?

The Court: I have suggested to counsel that that question is immaterial as to what this means, but I would like to know in that connection what the Government insists is meant by that. Does it hold the entire coca leaf or the entire cola nut is in there, or the extract of coca leaf or the extract of cola nut is in there, or what does it say?

Mr. Miller: We insist under all the authorities that the most liberal view to take in favor of the claimant

is that is must contain two things, namely, an appreciable quantity and of desirable quality.

The Court: Do you mean appreciable quantity of the ground coca leaf and of the ground cola nut?

Mr. Miller: Yes, of both—we won't say the cola nut but an appreciable quantity of the cola leaf.

The Court: Of the ground substance or what?

Mr. Miller: No.

The Court: Then what do you mean?

Mr. Miller: I understand, if your Honor please, in the interpretation of these things, that the accustomed officials and others presume on all questions relating to matters of that kind, the words are used in their ordinary accepted sense.

The Court: We will assume that there is evidence that coca means coca leaf, and that cola means cola nut. Now assuming that, although there is some contradictory proof, what do you say the average man would understand by that, what part of the coca would he understand was in there and what would he understand was the part of the extract of coca—what is the Government's theory on that as to what that means?

Mr. Miller: Its theory is whether the ground or the powdered or dry is in there, that it contains some appreciable quantity of coca leaf, I don't mean after it is decocainized.

The Court: What do you mean, the coca leaf in its physical substance or in its chemical action?

Mr. Miller: Its chemical action.

The Court: Then it must contain an appreciable degree of some chemical or physiological effect derived from the coca?

Mr. Miller: Yes.

The Court: And you say that an ordinary man seeing the label "coca" would understand from that that the product contained some characteristic quality that was derived from the coca leaf.

Mr. Miller: I say that, but I do not agree with counsel who spoke yesterday and referred to soda water. That is not a matter of interstate commerce. I do not agree this has to be tested by the ordinary retail purchaser or his understanding for this reason; these kegs and barrels seized were not shipped to the ordinary customer or the ordinary customer. He didn't buy them. They were shipped bulk. They had on them a pictorial design. You take the label, you take the name, and you take the picture. You take the photograph of the whole and you take the man to whom it is shipped, and that is what is to

determine in this case.

The Court: Then you mean the test for the jury is what the Coca-Cola Bottling Works understood by the word "Coca-Cola?"

Mr. Miller: No, sir; I don't think that. I think the test for the jury would be the test for the dictionary, the chemical test your Honor put, the test as shown by the chemist as to what the chemical composition was.

The Court: I am not getting at the determining of the question of fact. I am trying to get at what your theory is as to what the word coca means. In your libel you say it was representative of the presence in said fluid product of the substance coca and cola. That would seem to me that the coca leaf was physically present.

Mr. Miller: It would be representative of the coca in its original and dried state.

The Court: Now, you do not say that. You do not say that coca would indicate to the purchaser whether of the gallon jug or at the fountain, that there is any coca in there in its dried state, and he would not understand that, but he would understand there is some essential principle derived from the coca.

Mr. Miller: If it was in its original state, there must be some essential principle in it when a name is taken—

The Court: You don't contend that it means that there was any ground portion of the coca leaf?

Mr. Miller: No, sir; the decocainized as it is—I don't mean that—

The Court: I am not talking about the decocainized, but do you contend that there is some of the actual original substance in its original shape in the compound?

Mr. Miller: Yes, some of the original substance.

The Court: But I say that in its original shape. There is a difference there.

Mr. Miller: But not as to the active principle. The substance, the original substance, whether it comes in its original shape or whether it goes through a process is there, what is ordinarily meant by coca is the way coca is defined.

The Court: Your libel would seem to imply that there is some representation that there is some actual cola leaf in there. Now I understand you do not claim that but you say there is the essential principle derived from the coca leaf in there.

Mr. Miller: That is what I think the libel undertakes to say. I say there were some of the substances known as coca and cola.

The Court: Some of the coca substances were contained

in it, but what is contained is the essential principle derived from the product. I just want to get at exactly how you construe these words.

Mr. Miller: I think any of the properties of the coca leaf in an appreciable quantity and of desirable quality are the determinative factors and it don't make any difference whether in its original state or in a chemical state, but as applied in this case, I think chemically speaking, is to be given the consideration, because it is not claimed by anybody that you cannot take the leaf and treat so that it don't have any properties at all, and it would not have any chemical or physiological action at all in that shape.

The Court: Then I understand that the use of the word "coca" is a representation that there is in this compound of Coca-Cola some quality of an appreciable degree that is derived from the coca leaf.

Mr. Miller: That is our contention better than I could perhaps state it, but that is the way I wanted to state it.

The Court: I am not trying to improve on your statements, but I am just trying to get at your idea.

Mr. Miller: We think that the use of the word "coca" implies that the mixture contains a property or quality of that substance. If it did not, I do not know the occasion for using it at all. I cannot conceive what a man used it for originally if he did not think it applied to that, because the Courts have uniformily in interpreting matters of this kind, given words which are the names of substances, their ordinary significance, and have written that into them when they come to construe what was or was not proper for a trade name.

The Court: Now, suppose for the purpose of illustration merely, that the substance coca is a foreign character and so little known that the name "coca" is only known to a few men of science, and a few men engaged in the business of selling it, and that the average man don't know anything about the word "coca" but regards it merely as a fanciful name and does not get any indication of its meaning, it that in violation of law?

Mr. Miller: I don't believe that is a fair test under this law. While I am not at all apprehensive as to what the average man does understand by the use of the term, at the same time I think that would be a narrow construction.

The Court: You have used an extract from the opinion of the Attorney General in which he said the name should be taken which would convey to the fair mind of an average man, even though it might be misleading to a man

of science.

Mr. Miller: But that was with reference to an article unlike this.

The Court: It was a general statement as to what should be done under the Act and the purpose of the Act. It was in a whisky case.

Mr. Miller: That was a case where there was consumption by a purchaser over the counter. This is a case where there was a seizure made of certain barrels and kegs with this design on it, and the ordinary purchaser over the counter does not get the pictorial design or label at all.

The Court: Have not the bottles the label on them?

Mr. Miller: The bottles have been put in evidence.

The Court: The soda water fountain purchaser may not see the label but the purchaser of the bottle would.

Mr. Sizer:: No, the bottle just has the word Coca-Cola, not the picture.

Mr. Miller: Now, as to whether they can hyphenate the name and make it any better than the words, I want to call your attention to —

The Court: There are several food and drug decisions in which they say the test would be the knowledge of the average man, that they wanted to protect the consumer and not simply the man of science.

Mr. Miller: That is quite true.

The Court: Do you agree to that?

Mr. Miller: I say that those cases, insofar as I have read them, of course I have not read them all,— that in those cases there is a radical difference, and one of the differences I have states is the characteristic label —

The Court: I am not asking any question as to the label, but whether or not in testing the question of whether the name is on the label is misleading, it is to be tested by the knowledge of the average man or the knowledge of scientific men.

Mr. Miller: I don't think either is to be excluded.

The Court: The Courts have decided that scientists would be included among the average man, as he is a part of the average man, that he would have to be included in that designation, and would not the ultimate test be the knowledge of the average man?

Mr. Miller: I think the test would be the knowledge of the average man, assuming that he has before him the label and that his attention was drawn to the design and everything just as it appears here.

The Court: Yes.

Mr. Miller: Yes, I think that is true.

The Court: Now, to carry that further suppose the average man didn't know anything about the substance coca at all, then if he didn't know anything about it, can it in any sense be misleading.

Mr. Miller: If he don't know anything about it and if he had that design before him and still didn't know anything about, then it probably would not be misleading. If that design were put on everything he sold, if that leaf and that nut and that name was put on everything sold to the customer, and it appeared that the customer did not know anything about it, it might not be misleading.

The Court: If a man of average intelligence would not know anything about it and would not draw any inference from either the name or the picture because of his lack of knowledge about either, then it would not be misleading.

Mr. Miller: I am not prepared to go that far or to say that the Government goes that far, but I certainly would not be afraid to try this case on that proposition.

The Court: I want to find out how far you go. If this case goes to the jury, I have to instruct the jury.

Mr. Miller: Our contention is in the first place that the man of average intelligence combines that everyday knowledge with the knowledge of the scientist—

The Court: There is no doubt about that, that in arriving at the knowledge of the average man, you would have to assume the scientist so far as they are an appreciable portion of the community.

Mr. Miller: Now, I think it is true that some of the decisions have gone to the extent of not even considering the distinction your Honor draws between the scientific and the every-day man, but it does seem to me that either the Court's contention was not drawn to the point under consideration, or else the decisions are not sound and logical, because we can not presume that all the citizenship is ignorant and that they do not possess to a certain degree, some scientific knowledge. Now I think a fair position for the Government in this case is that it is what the average purchaser of this product sealed as it was when it was seized in this case, labeled as it was when it was when it was seized in this case, would be as to what composed it.

The Court: Now, Mr. Sizer, do you agree that that is fair?

Mr. Sizer: Well, I think that may be true, but I submit that we cannot take one of the elements in this name alone and say that the test as to whether the article was misbranded or not would depend on the meaning attached to that particular name because we say we have

the right to take the names of anything in common use.

The Court: I don't mean to get into that question, but it is a question of who has knowledge. In considering that a thing is misleading, it implies something is misleading. Now, who does that mean?

Mr. Sizer: The man to whom it was offered and who bought it.

The Court: The ordinary purchaser?

Mr. Sizer: And that question is to be determined with reference to the state of knowledge at the time this product was put on the market.

The Court: Now that gets into another question. I think both of you are practically agreed that the question is as to the effect on the mind of the average customer including everybody.

Mr. Miller: I don't think that is the fair purport of what I said. I said the average purchaser of the product as it was when it was labeled and seized in this case. Of course, you will run across a few who don't know anything about it at all. But I am speaking of the man who buys it as the product was put up in packages at the time it was seized.

The Court: Then there is no material difference on that subject. Some of these questions I am putting are not directed merely to the motion for a peremptory, but to get your views on the law if I should ultimately overrule the motion.

Mr. Miller: Now, upon the question of the hyphenated name, we have an adjudicated case from New York. It is from the State Court, but it is a positive adjudication. If your Honor cares to hear from that, I will read it.

The Court: I shall be glad to have a memorandum of those authorities, although as I said with reference to the question of law, if we could settle on that label, it passes beyond the domain of law and is for the jury, but I should be glad to have those authorities in the event I do overrule the motion as bearing on the charge.

Mr. Sizer: What is the name of that case, Mr. Miller?

Mr. Miller: Caswell vs. Davis, 58 New York.

Mr. Sizer: And that is distinguished in Keasby vs. Bromo Caffeine Company.

Mr. Miller: If it is not desired to hear from me on that question, I will pass.

The Court: As you are going to be replied to, you can refer to it.

Mr. Miller: Here is what they say in that case:

> "Nor does the coupling together in a new combination of words which before that had been used

apart and had entered into the common or scientific vocabulary give a right to the exclusive use of such combination where it is indicative not of origin, maker, use and ownership alone but also of quality and other characteristics."

Here we say it is indicative of the quality and other characteristics.

Then I want to call the attention to the opinion of the Attorney General in the Whisky case as to what is a distinctive name where he says it must be such as to clearly distinguish the article from all other things.

The Court: Do you contend that this goes to show that the substance Coca-Cola is not the only substance known by that name and that there is another substance sold under that name?

Mr. Miller: If this name implies anything, it implies as Mapleine did, that it is an extract of coca.

The Court: But that gets into another question. I am asking as to a question of fact. If the evidence shows that there is any other article like this that has been known under this name and this is not the article sold under that name, does the public know this article under this name or is there any dispute as to that?

Mr. Miller: I don't dispute the fact that this substance has uniformly been sold as Coca-Cola, barring the change in formula.

The Court: Take the last ten years, that may be different from what it was known before, but it has not been different in that time.

Mr. Miller: That change was in the last ten years, it was made about seven years ago.

The Court: About nine years ago.

Mr. Miller: 1904.

The Court: No, 1902.

Mr. Miller: I appeal to the record and to Dr. Schaefer's testimony on that point.

The Court: Well, say it was seven years.

Mr. Miller: Now, I don't think it can be said that coca and cola whether put together or hyphenated, distinguishes this product from all other compounds of coca and cola. If it means anything, it means a compound of the two. Now, can it be said in the language of the attorney general, that it distinguishes this from all other things, namely, a compound of coca and cola. How would express a mixture of coca and cola except by the word coca-cola?

The Court: Does it not indicate a specific combination distinguished from any known combination of coca and

cola and from every other compound of coca and cola?

Mr. Miller: It distinguishes everything on the market, but it does not distinguish it from anything that anybody wants to make up. It conveys the idea of those substances.

The Court: We are not talking about conveying an idea but about the distinctive name. Has not this combination for seven years been sold to the public under the name of Coca-Cola and as representing an article distinguished from any other combination of coca and cola or any other combination.

Mr. Miller: I don't think it distinguishes this mixture from any other combination of coca-cola.

The Court: There is no other combination of coca-cola—at least the proof does not show it.

Mr. Miller: Quite true, but that is just exactly one of the things the trade-mark law does not intend to precent and interfere with, and that is if there be a combination or if a man make up one by taking ordinary substances and putting them together so as to make their name express their qualities, one man cannot enjoy a monopoly on that.

The Court: It is not a question of whether a trade-mark could be gotten, but it is a question of fact, whether this combination is distinctively known to the public under that name.

Mr. Miller: Inasmuch as there is no proof on the various other things sold and as it is proof that there is a coca extract and a cola extract on the market, it must be that a combination of the two is easily produced by mixing.

The Court: I think some of the druggists in Knoxville say there was no other article under that name.

Mr. Miller: And that is as far as they know.

The Court: It has not been contradicted in any way.

Mr. Miller: Now proceeding further with the Attorney General's opinion, he says: "But one which has by common use come to mean a substance clearly distinguishable from everything else." Can it be said that this substance is clearly distinguishable from everything else, every substance and every ingredient that enters into this name at all is part of another substance.

The Court: But the combination as a whole, is distinguishable from everything else, and produces effects distinguishable from every other compound.

Mr. Miller: It is if we deny to everybody else the right to compound it.

The Court: This has acquired in the public mind a fixed idea as having certain definite effects that no other

article has.

Mr. Miller: It might not be argued that a man would not have a right to make coca and cola and mix them together and sell it as a combination of the two.

The Court: Certainly not.

Mr. Miller: Now, borrowing Judge Sanborn's phraseology—he says he thinks that what is a true test as to what people would understand by a word from the situation, including the statements on the label and anything else—

The Court: That is in reference to the label—

Mr. Miller: Yes. Now, having that label, taking that name—I cannot see how it can be seriously argued that the average purchaser would distinguish this product from any other combination of coca and cola that could be made, or how it can be said that this name which merely couples two substances, coca and cola, becomes distinctive as against those substances or in admixture of those substances. It might be that I am in error about that.

Now, if I understand the contention of the claimant it is that they may use this name provided it is shown to be distinctive name although the two words are the two names of two known substances, and it was said yesterday I believe at the bar that if they had registered a trademark and had acquired a distinctive name at the time this law took effect, they continued to use this name, notwithstanding it was fraudulent and deceived the public—

The Court: Even if it was misleading, if the name was a distinctive name.

Mr. Miller: That was their argument at the bar. And we understand right there is where the line is drawn between the Government and the claimant in this respect.

The Court: There is this to be said on that argument—that would not even,—if it protected the name—not protect any deceptive statement on the pictorial design.

Mr. Miller: I think that matter of pictorial design enters materially into the case.

The Court: The pictorial design is indicative of the distinctive name—

Mr. Miller: And the use of the label and of the pictorial design in connection with the words together to explain the words, to give them their true understanding and meaning. Now, if I understand Judge Sanborn's ruling at all, it is that a name which is within itself false or misleading and I say again if Coca-Cola—that it is made up of the combination of the words coca and cola. Now, if they be false and misleading and that name does not represent the ingredients of the substance contained in the mixture, it cannot be a distinctive name, cannot have a

distinctive name which hinges on fraud and deception, and this law was not intended to protect that. I think that this law like the trade-mark law was drawn for the purpose of protecting the people and for giving to the public knowledge of what they are getting when they go to purchase anything, and to say that a man because he has been in business for a certain length of time can make a design for his distinguished name which upon its face is fraud is to my mind inconsistent with this law because such is not the policy of the law.

The Court: Judge Sandborn's opinion does seem to imply that.

Mr. Miller: And in so far as the trade-mark goes they certainly bear that out—they hold that a name which is misleading and which is deceptive cannot be made a basis for an injunction at all when you come into court.

The Court: Well, that is on a different proposition—and is only on analogy.

Mr. Miller: That rests principally on the theory that they must come with clean hands.

The Court: But as to distinctive name—

Mr. Miller: In that same connection, if your Honor please, when Congress came to protect the distinctive name it certainly did not mean a distinctive name which was a cloak for a fraud, and under which people could sell poison or anything else because if that be true they could sell poison, it don't make any difference what, all sorts of poison under this distinctive name if the claimant's contention is sound, and hence I think that does not admit of serious thought, when you come to consider the intention of the law and as I said at the beginning—

The Court: In that view of it, first sub-section four under section eight in reference to the false statement, it is said that if the article does not contain any added poisonous or deleterious ingredient it cannot be deemed adulterated or misbranded in case it is sold under its distinctive name. Now, there is no exception there with reference to whether that distinctive name is false or misleading. It says if it is sold under its distinctive name it shall not be deemed to be misbranded or adulterated. Can you say then if it is sold under a distinctive name that that distinctive name would protect it?

Mr. Miller: In addition to being a reflection on the intelligence of the law-making body, it would be antagonistic to the very question of the law itself.

The Court: It seems that there is a direct conflict in the language.

Mr. Miller: When you read it, you have read it from

the four corners and harmonize it, if we can, that is the rule of interpretation, and in doing this I do not think when we take all these sections together that they harmonize as a whole—

The Court: There is nothing to harmonize, the constructions is a specific statement and says that it shall not be misbranded or sold under a distinctive name.

Mr. Miller: But that is upon the assumption it contains first no poison or deleterious ingredient.

The Court: Now, as to the question of misbranding. We are only talking about the question of misbranding now.

Mr. Miller: Yes.

The Court: Using it and selling it—not in imitation of anything, and it is accompanied by the name of the place where it is manufactured.

Mr. Miller: It is under the distinctive name of other articles.

The Court: Yes.

Mr. Miller: We contend that if it is the name of another article—

The Court: Assuming that it complies with the condition, now, in the first sub-section of section four or the first clause of sub-section four of section eight—that it complies with everything stated there in reference to the distinctive name, how can it be deemed to be misbranded under the specific language of congress, even if it is false—

Mr. Miller: It can only be misbranded if every ingredient that goes into it is an added ingredient.

The Court: That would not make it misbranded—

Mr. Miller: That would materially influence the misbranding of it because they happen to show three things.

The Court: It might have an added deleterious ingredient, but I see the force of your point, it might prevent it from getting the benefit of the exception—But assume it has no added deleterious ingredient.

Mr. Miller: If it has none, why, of course there is no question made about it.

The Court: Then you can see that if it has no added deleterious ingredient and has a distinctive name under sub-section four, then it is protected from the charge of misbranding even though that statement in name misleads.

Mr. Miller: No. I submit that the very doctrine of distinctive name, I do not believe it means to protect anything other than a truthful distinctive name.

The Court: Then what it means by saying it shall not

be misbranded if sold under a distinctive name—it never could be misbranded if it had a distinctive name that was truthful, it never could be.

Mr. Miller: Every distinctive name does not refer to substances—they refer to other things. It might refer to a man's name. It might include a man's name. It might include a great many things besides substances and not l misbranded, but when it comes down to a substance it has to speak the truth because the public has to have knowledge of what drugs and foods they are getting.

The Court: Do you mean to say that it would not protect against the charge of misbranding even if it does not contain an added deleterious ingredient by the doctrine of distinctive name because as I understand your position it is that the words "distinctive name" necessarilly exclude the name which is false.

Mr. Miller: If you base that statement on Judge Sanborn's ruling—

The Court: He seems to imply that—if that is based on the doctrine of distinctive name—because the word "distinctive name" implies true name—it would have no application to the misrepresentations contained on the label, or the pictures then would be protected because—if the name is true, if the name is not misleading, then it would be protected, if it has acquired a distinctive name which is not false—

Mr. Miller: If I understand—I did not follow your Honor.

The Court: I understood you mean to say that in order to avoid the apparent inconsistency of the language of these two sections, that is, the proviso and the clause that follows it—we are to define "distinctive name" as meaning only a true distinctive name.

Mr. Miller: That is one that is not found in there—

The Court: If you are right about that, that would mean a product which was misbranded by having a distinctive name—from being protected simply because it was sold under a trade-name— and a trade-name not being distinctive name, that would protect it if—

Mr. Miller: Well—

The Court: That applies in so far as an objection is made to the name, but if the misbranding consists of the label, a pictorial design, then the same article would be protected by having a distinctive name where it really had a true distinctive name.

Mr. Miller: Well, your Honor—

The Court: Well, anything that is misleading about the name, and that name had become a trade-name or a

distinctive name, it would protect that article from a charge of misbranding by reason of a false pictorial design on it because it says it shall not be deemed to be adulterated or misbranded where it is sold under a distinctive name, and it contains no added deleterious ingredient.

Mr. Miller: I do not see anything in that question that would prevent a proceeding against it if it had a false label attached to it.

The Court: It should not be construed to that extent but that would be the literal meaning of those words.

Mr. Miller: I understand that the label and distinctive name features and added deleterious ingredient feature are largely differentiated by this Act.

The Court: Well, in the very section—Clause four which refers to the label, it says that the article shall not be deemed misbranded and a misbranded article which has a false label, provided it contains no added deleterious substance and provided that it is sold under a distinctive name and that would seem to imply that you could sell under a distinctive name a product—

Mr. Miller: If the label show or bear any statement or device which is false or misleading in any particular. I did not see anything there that protects the false or misleading label at all. It seems to me that instead of that—it is forbidden.

The Court: You have not read the provision—

Mr. Miller: Now, the following provision: "Provided that an article of food which does not contain any poisonous or deleterious ingredient shall not be deemed to be adulterated or misbranded." Now, first, in the case of an article of food under its own distinctive name, now, anything offered for sale under a distinctive name or any article if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced."

It does seem to me that that would not follow, that a statute which provided a man might have a false label attached and at the same time that that would be a protection for his false and misleading name—

The Court: I did not make myself clear. That it was a correct name but only misbranded or printed with the label otherwise, a pictorial design. However, that is not very important.

Mr. Miller: Just one thought on that as to the selection of the name—New York against the—a New York case that I have here, of the People against Butler, 118 N. Y. Supp., and the article involved there was vanilla—

under a distinctive name. Their Act contains an added ingredient, Peerless Extract of Vanilla—but the Court observed it could not escape the charge of misbranding by selling a spurious article as a genuine article.

Now, there are genuine articles named coca and cola, and I submit because this claimant might have seen fit to put the words together—if there is no appreciable quantity of either in there, they could not escape the charge that it was misbranded, applying the name of a genuine article to a spurious article.

I think, if your Honor please, that is about all except what I had to say on the trade-mark law and I understand your Honor does not care to hear from me on that, and if so, that is all I care to say.

The Court: I would like to hear from you on another question that it may be necessary for me to submit the case to the jury on, on this alleged coloring or concealing matter.

Mr. Miller: We think that the evidence shows—

The Court: I just want to get your theory about it.

Mr. Miller: Dr. Kebler and Mr. Lynch and Dr. Leroy's statement—

The Court: I do not care as to the testimony; I wanted your theory.

Mr. Miller: On the ground first that it was distinctly proven by these witnesses that certain sanitary conditions existed, and, second, it was shown as to one batch of this mixture which was analyzed carefully or tested, that certain things were contained in it which violated one provision of this Act, and your Honor is more familiar with it than I am. It was sub-section four, and further, there is proof by Dr. Kebler that the adding of the coloring matter would stain or coat or conceal these subtsances so that these remnants—

The Court: What substances are you talking about?

Mr. Miller: We will take germs and the substances that Dr. Leroy said probably would be there—and we can take this and reasonably infer from his statement—

The Court: Did Dr. Kebler say that the presence of coloring matter would conceal germs? Did he say that the presence of caramel would keep you from finding a microbe?

Mr. Miller: No. He said this substance contained coloring matter, that at first it was of an amber color and that it was then added to so that it would be made a dark color, and they were distinctly asked on the point as to whether or not these conditions would serve in any manner to conceal the presence of foreign matter.

The Court: Now, you have proven actually that there are no inferior elements contained in it except sawdust and insects, or whatever it was,—does the Government insist that the caramel would conceal that at all?

Mr. Miller: I do not know that it would be limited to caramel, but burnt sugar, I think really does.

The Court: Is there anything in there to conceal it—it is perfectly obvious that coloring has no effect on it.

Mr. Miller: I can only state what the proof was.

The Court: How would the coloring matter prevent anybody from seeing an insect or the sawdust that was in it?

Mr. Miller: For the same reason that I could see it if it was in a bucket of water and could not see it if it was at the bottom of a gallon of molasses.

The Court: But the Coca-Cola syrup, anybody could see it.

Mr. Miller: Well, your Honor saw the color of that syrup—there was some of it shown around here. Before this coloring matter was put in it, it was of a light amber and you could hold it up before the light and it was a clear substance; and then afterwards it was colored.

The Court: That only referred to one keg.

Mr. Miller: Let us see about that point. It was picked out or taken out of the seized goods, as this record shows, and was sent to the Department. That is the only one we got. The proof is that the whole of these packages were made up at the same factory and under like conditions.

Now, I think it is fairly inferrable that whatever that one contained the others contained. Of course, as to what was in that other keg we have not shown but they have not shown anything to the contrary.

The Court: I do not think that the Government by proving that sawdust in that keg, can draw any inference that the other keg contained any sawdust.

Mr. Miller: The Act, of course, as your Honor knows, provides that the claimant can interpose and give bond and take this whenever it likes—it was only by special order of court that one keg was taken. We got one keg and analyzed it, we did not get any other.

The Court: You could have had samples.

Mr. Miller: Yes, but it is shown how these foreign substances were detected; that is, by filtering paper and letting it get down to the bottom, we could not do that in all cases.

The Court: The claimant might come in and give bond and take the things away before the things could have

been examined in court.

Mr. Miller: Yes, before they are examined in court, but they did not—of course, I am not finding any fault with what somebody else did, but on this examination of this one keg these things were found and it does seem to me that it is fairly inferrable, having been made under like conditions and everything else as to strainers, that whatever existed in this keg might exist in all the kegs.

The Court: I think, Mr. Miller, that if an article is colored with caramel, because it is a pleasing color and attractive color, that it is no intention to conceal any inferiority, and then if in case of putting it up and before it is sold sawdust gets into it, assuming that caramel is so thick you cannot see it, that that kind of a case comes within the Act.

Mr. Miller: If it should be found that this was put up in a proper sanitary way and if it was bottled or packed up and sent out and put in kegs and insects dropped into it accidentally, I do not think that would make a case against the company. On the other hand, I do not think the Government has to show any intention on the part of The Coca-Cola Company to put the particular coloring matter in there for the purpose of concealing any inferiority that might have existed. I think if they put the coloring matter in the article and under the language of the statute, if the result of it was and if the objection of it was to conceal it, why, then—

The Court: "Whereby" is the word.

Mr. Miller: That means, of course, the fact—the word "whereby" is to do certain things, as I construe it—under this proof it seems to me that these kegs all being made in like sanitary condition and the coloring matter being put in, that company by the aid of a proper bacteriologist might have known this condition which might result that certain foreign substances—

The Court: There is no evidence of any bacteria—it is a question of sawdust and insects, a thing that anybody can detect.

Mr. Miller: The bacteriologist showed, when the hypothetical question was put to him, being given the sanitary condition that under conditions like those there, certain elements or certain germs—that those germs might exist.

The Court: I do not think the bacteriologist testified that there would be any condition under which germs,—the presence of which would be obscured or which would be concealed by the caramel syrup.

Mr. Miller: No, but he said likely—

The Court: Well, suppose they are, unless the caramel

syrup would prevent or conceal the germs, it does not come under this subject.

Mr. Miller: Well, we could only make out a case by piecemeal. We did not know anything about the other things. Another witness showed that the effect of adding this coloring substance would be to conceal the presence of them.

The Court: I understood you to say a moment ago that there is nothing said about concealing germs or microbes.

Mr. Miller: My recollection is that Dr. Kebler or Dr. Fuller said—

The Court: That it would conceal them?

Mr. Miller: Render them less noticeable or less observable, that is the very point when you have got a sugar liquid, make a dark liquid; you cannot penetrate it with the eye at all.

The Court: Well, just let me have the evidence on that point.

Mr. Miller: Here is a sort of an extract from it, prepared hastily. Dr. Leroy's statement is in there.

The Court: All right.

Mr. Miller: One more thought.

The Court: Does the Government insist that there is any proof that this product was sold under a distinctive name of any other product or extract of it?

Mr. Miller: It is insisted that it is sold under the distinctive names of coca and cola.

The Court: But that is not any other product. It is not an imitation of the coca leaf or the cola nut. Nobody buys it or would be deceived in thinking in buying it that they were buying coca leaf and cola nut.

Mr. Miller: That gets back to the question of what character of purchasers we are going to consider.

The Court: Well, no man would buy it thinking he was buying coca leaves or cola nuts—he might think he was buying an extract of it.

Mr. Miller: Yes.

The Court: How is this an imitation of the coca leaf and cola nut?

Mr. Miller: I did not get that.

The Court: Do you say that it is an imitation of an extract of coca leaf and cola nut?

Mr. Miller: We say it is sold under those names—

The Court: You don't say that—

Mr. Miller: Let me read the language here—

The Court: If you made the charge that it was sold in imitation of an extract of coca and cola nut, you might have something to predicate that argument on.

Mr. Miller: I will state further that the product is an imitation of articles and substances known as coca and cola.

The Court: Well, your whole theory has been that coca means the coca leaf and cola means the cola nut.

Mr. Miller: Some product of them.

The Court: You say it is sold in imitation of these substances, the coca leaf and the cola nut. It obviously seems to me it is not an imitation of the coca leaf and cola nut.

Mr. Miller: We have shown that they possess certain distinctive properties—

The Court: You do not allege that they are imitation of any products or of any other substances derived from the coca—you do not prove that is an imitation of any other substances derived from the coca leaf and the cola nut.

Mr. Miller: We do prove this, that there are such substances as coca and cola and we show what they consist of, and we also show that they are admitted into this country.

The Court: But you do not say that any article that is derived from the coca or the cola, that this article imitates in any way.

Mr. Miller: That depends on whether the name Coca-Cola does not imply that it is a mixture of the product of the product of the two—the essentials of the two, coca and cola.

The Court: You do not say that there is any article of commerce known as, to wit: Coca and Cola.

Mr. Miller: We proved that it was, and it is in evidence—

The Court: That any article is known as coca and cola?

Mr. Miller: You mean the combination of the two?

The Court: Or that this is an imitation of the extract of coca and cola, or that it was sold in imitation of it.

Mr. Miller: I do not think it is sold in imitation of it, I do not believe that is true.

The Court: You do not allege it is sold in imitation of any product from it and do not prove that it has any extract, or that there is any extract known by the name of coca and cola. The question of imitation is different than the question of consistency. Without other argument my opinion is quite definite on that point.

Mr. Miller: We say that it was offered under the distinctive names of two substances, and that is a distinct infraction of the Act. There are certainly two such substances as coca and cola and the Act absolutely says derivatives—

The Court: The Act provides that it prevents it from being sold under the name of any other article, but not in combination with any other two articles.

Mr. Miller: A thought right there. If you fobid the sale of it under the name of one article, you ought not to be permitted to sell it under the name of two, simply by using the two names coca and cola. Of course, passing from that and coming to that alleged sign with the coca leaves and the cola nuts on it—it is suggestive of the presence of coca and cola in it. We do not say coca leaves and cola nuts—

The Court: You have not offered any proof to show that coca means anything but coca leaves and cola means anything but cola nuts—

Mr. Miller: Our case rests on the proposition that these articles have distinctive properties.

The Court: Yes, coca is a distinctive thing and cola is a distinctive thing.

Mr. Miller: We say that the representation on this design suggests that these substances are in this compound and we say they are not there.

The Court: As I have stated, if they are protected by a distinctive name, if they have distinctive names, why, I think that is a question for the jury.

Mr. Miller: I think that is all.

The Court: In short, it seems to me the question as to whether this case should go to the jury at all outside of the question of the sawdust which I do not regard as very material in this law suit, that that question hinges on the question of fact as to distinctive name and the meaning of the word "added."

Mr. Miller: Those are the two things that I tried to present today.

The Court: It seems to lead to that. They are questions that are very difficult.

Mr. Sizer: Now, in respect to the added ingredient question, may it please your Honor, Mr. Miller assumed and I think your Honor was rather inclined to agree with him that there was nothing in the Act to indicate that the word "added" was intended to apply to compounds.

The Court: It does—

Mr. Sizer: You said there was nothing to exclude its application to compounds?

The Court: I said there was nothing in the Act to indicate that the word "added" was used in a different sense as to natural articles and compound.

Mr. Sizer: On the contrary, there are places in the Act in which it is clearly indicated that the word "added"

does apply to compounds as well as to simple substances. I refer to the provision that Mr. Miller talked about a while ago. (Reading:) "If the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substance contained therein which statement, design or device shall be false or misleading in any particular. Provided that an article of food which does not contain any added poisonous or deleterious ingredient shall not be deemed to be adulterated or misbranded."

And, again: "In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names and not an imitation of or offered for sale under the distinctive name of another article."

And: "Provided that the term 'blend' as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only."

And, further: "And further provided that nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their trade formulas except in so far as the provision of this Act may require," etc.

Congress comes along and uses the word "added" as applied to food products. It does not say that the construction of General Cox and Mr. Miller's construction, that the word "added" is superfluous—they should have said that the manufacturer of a proprietary food which does not contain unwholesome ingredients shall state his formula—they come along and use the word in the connection in which it is used—in which it appears: "Manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their formulas."

I think the full discussion in Congress and before the committee shows that this word "added" was intended to refer to prohibiting the putting in of preservatives and coloring matter, that that is what it was particularly aimed at, benzoate of soda, and nitrate in flour, and Marsh's yellow in macaroni, things that were wholly foreign to food products in which they were put and put in for preservatives and coloring matter. Things which would mislead a man into thinking that he was getting something that he did not want to get, constituting a fraud or deception.

The Court: Now, suppose that the word Coca-Cola did mean, as Mr. Miller insists, a combination of coca and cola,

caffeine added, it would be misleading.

Mr. Sizer: But, your Honor, if we sell a combination of coca and cola—sell a food product,—for instance, if we sell a food product to which we give the arbitrary name, Coca-Cola, and if that food product has always had a certain proportion of caffeine in it, it cannot be considered an adulteration in that product. Mr. Miller's whole argument on the misbranding feature is based on the assumption that you cannot use two well-known names and apply them to any product unless the product to which you apply them contains the constituent elements of the two substances whose names go to make up the compound name. That is not true, but as a matter of fact—

The Court: His contention was they did not contain the constituent elements—

Mr. Sizer: A man could not get a trade-mark name that is descriptive of the constituents of his compound for the manifest reason that every man is not entitled to use words that describe his compound. If a man makes a compound of various ingredients and simply calls it by the name of those ingredients, that is not a distinctive name and cannot possibly be—because any other man who takes those same ingredients and puts them in a different form is entitled to use that same distinctive name.

Now, we never have called this product coca and cola.

The Court: The word "Trade-mark"—in that connection it shows it is not a descriptive name.

Mr. Sizer: Certainly.

The Court: A descriptive name could not be trade-marked.

Mr. Sizer: Yes, the very fact that it is trade-marked shows that it could not have been descriptive of the ingredients entering into it.

The Court: Did the word "Trade-mark" appear on all the labels in this case?

Mr. Sizer: Yes.

The Court: I thought that on one of the trade-marks it did not show the word "trade-mark."

Mr. Sizer: I think the older ones, the trade-mark generally appears on the tail of the letter "C," but the owner does not confine himself to any particular form, but I believe in every single sample of the name offered in evidence that the word "trade-mark" appears on the tail of the C. I know it does appear in the second trade-mark.

The Court: Does it appear on the little tin labels that are on the bottles?

Mr. Sizer: I have one in my pocket.

Mr. Miller: But that one was not put in evidence.

Mr. Sizer: No, but they are all the same, the word "Trade-mark" is underneath.

The Court: That is because it is too small to write it in?

Mr. Sizer: I think your Honor will find without exception that it has been used. Now, here is our proposition: We never did say this was coca and cola, it is Coca-Cola, hyphenated, a compound name, a compound applied to a new substance that these people themselves invented. (Reading:) "Where a manufacturer has invented a new name or new word or new words in common use which he has applied for the first time to his own manufacture or to an article manufactured by him to distinguish it from those manufactured and sold by others and the name so adopted is not generic or descriptive of the article, it is not used to denote the grade or quality but is arbitrary or fanciful, he is entitled to be protected in the use of the name or trade-mark although it becomes so known or becomes the name of the genuine article."

Now, the name became so common, such a common name that a man went on and used that and it was held that no man was entitled to use it and the court held that others were not entitled to use the name that this man first had. Your Honor knows as a part of the general history of the country that at the time this product Coca-Cola was first made and this name was first used, practically no one knew anything about coca and cola, a substance about which we have had a great deal more to do since these people combined together the names of these two foreign shrubs which had never been associated in any way before, and applied that combined name to this food product which for the first time was made and put on the market.

Now, if it be true that since that time the names coca and cola have come to have some definite meaning—that could not defeat our right to the use of the combined name which we used long before these constituents, these substances coca and cola, came to be known as they are now.

I did want to say on that added ingredient this, with reference to what Mr. Mann said—that by the words "introduction into a food product"—"introduction" now, "into a food product"—that means the same as Congress meant by the word "added" ingredient.

In addition, he may have used the word "introduction," —addition to a food product of a deleterious and poisonous ingredient. That does not shed any further light on the Act.

The Court: The strong statement in favor of the Government's contention is that of Senator Heyburn, that is

the one that is in the way. That does seem that every ingredient of a compound must be regarded as an added ingredient.

Mr. Sizer: Yes, if that was so. The Act in its present form—it did not originate in the Senate. The Senate concurred in the House bill and certainly I submit that that cannot be read into the Act, something that is directly contradictory with express language, simply because Senator Heyburn in the Senate expressed an opinion that the Act did not mean what it said at all. You will notice in that same connection with respect to confections that the word "added" is not used at all.

The Court: The word "added" is not used.

Mr. Sizer: With respect to this distinctive name proposition—

The Court: What do you say to Mr. Miller's argument that a distinctive name can never be used in reference to a false name?

Mr. Sizer: As I stated a while ago, not only is that not true but the fact is that nearly every distinctive name is a false name, in that it is not descriptive of the ingredients. Take the man who first invented the pine apple; he gave to it the arbitrary name composed of two well-known food substances, but that was a new name applied to a new product. It is not descriptive of it.

Now, take cream of tartar; if there had been a pure food law when cream of tartar was first invented, it might have been declared misbranded and prosecuted for being misbranded because they called it something that it was not, but that name has been associated with that article so long that it is recognized and known.

The same is true of soda water and grape fruit.

The Court: You say that it was the intention of Congress when the name had been used for such a long time that the public knew what they were buying that the question of what the name originally meant was immaterial?

Mr. Sizer: Exactly, your Honor; no other construction could be put on this wording or language than an article that is known by its own distinctive name—why, because it is known by the public as that article and nobody is deceived by getting that article when he buys it by that name. No more than a man would be deceived if he did not get soda in a glass of soda water.

The Court: Would that not only protect it as against misbranding and so far as the name was concerned, but leave it open whether in addition to the name there were any false statements?

Mr. Sizer: No.

The Court: Take Coca-Cola; suppose that it now has a distinctive name of Coca-Cola. Now, is it subject to be proceeded against under this Act? Suppose tomorrow they should proceed and place on the label these words: "This is an extract of coca and cola," which is a distinct statement, if that should be made would they be protected from the false statement on the label because they had a distinctive name for Coca-Cola?

Mr. Sizer: Perhaps not; that would be a change in the name and an additional false statement.

The Court: No, no change in name, just keep the name Coca-Cola and keep everything in it as it is and put a false statement on the label—that distinctive name, can it be reasonable to infer that that would protect if anything except against such elements as may be contained in a name?

Mr. Sizer: Well, your Honor—

The Court: Would it be reasonable to say that it was intended to protect against the illustration that I have given?

Mr. Sizer: That might come under this proposition, that it appeared for sale under the distinctive name of some article.

The Court: Whether if I should conclude so far as the name is concerned that under the proof it has been shown such a distinctive name as to protect this article, whether I should still leave it to the jury as to the pictorial representation.

Mr. Sizer: I catch your Honor's suggestion as to this pictorial representation, it is just simply a picture that is descriptive, that would not be a misbranding under this provision of the Act.

Now, I was going to say there was a beverage sold by the name of "Poinsetta." As we all know, that is a big red flower; on the label is the picture of the poinsetta flower. Now, it is not contended there is anything on the poinsetta or that the picture of the flower does anything more than illustrate the name that the man has applied to this particular compound.

The Court: It is a picture.

Mr. Sizer: A picture of a flower. Now, on the keg, it has always been used on the kegs—I suppose they have always used kegs—the picture illustrating the name.

The Court: Like the shoemaker's sign.

Mr. Sizer: Yes. Like the picture of the arm and hammer on the soda.

The Court: I catch your illustration. If it gets to

that, I shall leave the question to the jury.

Mr. Sizer: Well, I believe, your Honor, that is about all I have to say and will leave the matter with the jury.

Thereupon the argument was ended on the motion for peremptory instruction, at the conclusion of which the Court stated:

The Court: Gentlemen, this is a very interesting question and there are very important questions in this law suit and I have certain impressions about it now, they are not convictions, however. I have been very much aided by argument of counsel. I do not want to decide the matter now; I want to think it over this afternoon and I will adjourn court until tomorrow morning. The law questions are so important.

Thereupon the Court at 12 o'clock M., adjourned until Thursday, April 6th, 1911, at 9 o'clock A. M.

CHATTANOOGA, TENNESSEE

THURSDAY, APRIL 6, 1911

NINE O'CLOCK A. M.

Court met in pursuant to adjournment.

Appearances: Same as before.

The Court: Gentlemen: In reference to this motion for peremptory instructions, I am not yet quite prepared to announce my conclusions and so far as this case is concerned we will take a recess until eleven o'clock. But before doing so, I wish to inquire of counsel in the case if there is any diversity of opinion as to this technical question: Suppose that I should be of opinion that the motion for peremptory instructions should be sustained as to certain of the charges contained in the libel, but not as to others, is there any difference of opinion that the proper practice would then be to sustain the motion to that extent and to submit those issues along with the other issues to the jury with peremptory instructions as to those issues and a general charge as to the others or should those issues, if any, upon which I should find that the motion for a peremptory instruction should be sustained be eliminated entirely and not submitted to the jury? I do not think it would make any material difference, but if counsel have any difference of opinion about it, I would like to hear from them. The result will apparently be the same in the end.

(Thereupon Court took a recess until 11 A. M.)

AFTER RECESS.

Court met pursuant to adjournment.

The Court: I have reached conclusions on the claimant's motion for peremptory instructions.

1. The chief question in this case arises under the allegations of the Government's libel that the food product Coca-Cola, which it seems to condemn, is adulterated in that it contains "an added ingredient, caffeine," which is alleged to be a poisonous and deleterious ingredient that may render such food product injurious to health.

Assuming, for the purpose of determining this motion, that if the caffeine, which is admittedly contained in the Coca-Cola in the proportion of about one and one-fifth grains to each fluid ounce of the syrup, is an "added" ingredient within the meaning of the Food and Drugs Act, there is such conflict in the evidence as to whether it is a deleterious ingredient which may cause injury to the health that the question of its qualities and effect should be submitted to the jury for determination, as a question of fact, and not of law, the preliminary question arises, whether upon the undisputed evidence in this case, it can be deemed an "added" ingredient to the Coca-Cola within the meaning of the Food and Drugs Act, so that its presence can in any event cause an adulteration of that article within the meaning of the Act.

The material provisions of the Act, in so far as they bear upon this question, are as follows;

By section 6 it is provided that the term "Food," as used therein, shall include all articles used for food, drink, confectionery or condiment by man or other animals, whether simple mixed or compound.

By section 7 it is provided that confectionery shall be deemed to be adulterated if it contain any "mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health," and that an article of food shall be deemed to be adulterated, "if it contain any *added* poisonous or other *added* deleterious ingredient which may render such article injurious to health."

By section 8 it is provided that an article of food shall be deemed to be misbranded "if the package containing it, or its label, shall bear any statement, design or device regarding the ingredients or the substances contained therein, which statement, design or device shall be false or misleading in any particular; provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases: First, in the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered

for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced, "and" provided, further, that nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome *added* ingredient to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding."

And by section 11, it is provided that if it shall appear to the Secretary of Agriculture upon examination of samples "that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this Act, or is otherwise dangerous to the health of the people of the United States," such article shall be refused admission.

In determining the meaning and effect of these provisions of the act, I have been greatly aided by the argument of counsel for both parties, who have clearly and forcibly stated their respective contentions, and who have conducted the case throughout with signal ability, learning and effectiveness.

Comparing then these several provisions of the act, so as to give each its reasonable and just meaning, consistently with each other, and in accordance with the general purpose of the Act, I am constrained to conclude that the use of the word "added" as applied to poisonous and deleterious ingredients in articles of food other than confectionery, in sections 7 and 8 of the Act, cannot be regarded as meaningless; and that, by contract with the provision in section 8 that "confectionery," which is usually an artificial compound, shall be deemed to be adulterated if it contain any "ingredient deleterious or detrimental to health," and with the provision in section 11 that admission may be refused to any food or drug offered to be imported into the United States if it be adulterated or misbranded within the meaning of the Act, or "otherwise dangerous to the health of the people of the United States," it was intended to provide by sections 7 and 8, that any articles of food manufactured and sold in this country in interstate commerce should not be deemed to be adulterated merely because they contained a poisonous or deleterious ingredient, except in the case of confectionery, but that all other articles of food, whether simple or compound, were not to be deemed to be adulterated on account of the presence of a poisonous or deleterious ingredient unless such ingredient was "added" to the article of food

in question, that is, was an ingredient foreign to its natural or normal constituency; and that this distinction applies by the specific provisions of section 8 to compound articles of food known under their own distinctive names not an imitation of, or offered for sale under the distinctive name of any other article and properly labeled as to the place of manufacture. Thus a natural article of food, for example, coffee—can not be deemed adulterated, even although the average cup contains a larger amount of caffeine than an ordinary drink of Coca-Cola, and even if caffeine may properly be regarded as a deleterious ingredient injurious to health, since such caffeine is clearly not an added ingredient to the coffee foreign to its composition, but is one of the essential ingredients naturally and normally entering into its composition. So an article of food which is not sold under a distinctive trade name, but under a well recognized name that has acquired a distinct meaning in general popular usage, as for example, sausage cannot be deemed adulterated within the meaning of the Act, however deleterious to health some of its normal ingredients may be, provided that as manufacturd and sold it does not contain any other poisonous or deleterious ingredients added to its normal and customary constituents. And so, likewise, I think it is clear from the provisions of the Act that a compound article of food which is manufactured and sold under its own distinctive name, and properly labeled with those qualities and effect the public has been familiar, and for which they see fit to buy it, is not to be deemed to be adulterated within the meaning of the Act, provided, that when manufactured and sold under this distinctive name it contains no poisonous or deleterious ingredients in addition to its normal and customary constituents as it has been habitually and regularly manufactured and sold to the public under such distinctive name; although, of course, if it were attempted to add to an article of food thus sold under its distinctive name another ingredient which it had not regularly and habitually contained under the distinctive name under which it had been sold to the public, and such added ingredient were poisonous or deleterious it would thereby become subject to condemnation under the provisions of the Act.

To hold otherwise would in my opinion render the word "added" as repeatedly used in the Act in connection with poisonous and deleterious ingredients, entirely meaningless, and would involve an irreconciliable contradiction in the clauses of the Act in which it is expressly provided that a mixture or compound known as an article of food under its own distinctive name not an imitation of or of-

fered for sale under the distinctive name of another article of food and not containing any "added" poisonous or deleterious ingredient shall not be deemed to be adulterated. The conclusion is to my mind unavoidable that by the use of this language Congress intended to provide that a compound article of food thus known labeled and sold under its own distinctive name, should be assimilated to a natural product and not be deemed to be adulterated whatever the character of its ingredients if it contained no ingredients other than those habitually and regularly entering into it as constituents under the form and with the characteristics with which it had acquired its distinctive name and become known to the public. In this case, as in the case of the natural food product, if the article is sold under the same distinctive name with the same constituents and with the addition of no other ingredients whatever the public in purchasing the article is not deceived — as it would be if an essential constituent ingredient were left out — but on the contrary, obtains exactly the article which it has been accustomed to buy under this distinctive name, and which possesses exactly the qualities and produces exactly the effect which renders it in the mind of the public a desirable article of consumption, without addition, change or adulteration. And which it is true that a purchaser of Coca Cola for example may not know either that it contains caffeine at all or the actual quantity of caffeine that it contains, the same thing may be true of the purchaser of coffee, or of other natural foods containing poisonous or deleterious ingredients. However, in the one case, as in the other, the purchaser obtains the article which he desires in its entire make-up and composition, without addition or subtraction and without the addition of any deleterious ingredient with whose effect he is unaccustomed, and which he does not desire. In short in the one case as in the other, the public obtains without deception exactly the article which it wishes to buy, producing the effect which it desires; and in the one case as well as in the other, I think the article cannot be properly said to be adulterated within the meaning of the Food and Drugs Act, and the plainly expressed intention of Congress on this subject.

To hold otherwise in my opinion, would be beyond the province of the Court and an attempt to reach by judicial construction a supposed evil in the composition of articles of food sold under their distinctive name, which, if a remedy be required, can only properly be obtained by legislation. It is well settled that the function of the Court in the enforcement of a statute is limited to the ascertain-

ment of the legislative intent as expressed in the Act, and cannot extend to either legislation or amendment, and that consideration of apparent hardship will not justify a strained interpretation of the law as it is written. The question, therefore, as to whether the Act as drawn is lacking in essential provisions for the protection of the public health in failing to provide that other articles of food as well as confectionery shall be deemed adulterated if they contain any ingredient deleterious or detrimental to health is clearly a legislative question which it is not within the province of the Court to determine.

Applying to the Act as thus construed to the undisputed facts in evidence, I find the facts established without any contradictory evidence, to be that the name "Coca Cola" is a trade name which has for many years been given by the manufacturer to the food product in question, and upon which name a copyright was many years ago obtained; that this food product is an artificial compound used in the preparation of beverages consisting of a sweet syrup colored with caramel, with some phosphoric acid, lemon juice and other minor ingredients, with perhaps some ingredients or qualities derived from the coca leaves and cola nuts which are used to a certain extent in its preparation after being subjected to a process by which the cocaine and certain other ingredients are extracted and also containing as an essential ingredient of the compound caffeine obtained in the main by chemical extraction from therein; that this compound has been for many years manufactured under a formula prescribing certain definite proportions of such caffeine as one of its essential ingredients; that for many years as so manufactured and sold it has regularly and habitually contained the same approximate amount of caffeine, being about one and one-fifth grains to each fluid ounce of the syrup, although slightly less caffeine is contained in the syrup prepared for use in bottles than in that prepared for use at soda fountains and although the percentage of caffeine in each individual container may vary slightly owing to process of manufacture employed, the average caffeine content being, however, substantially as above stated; that for many years this compound, containing such caffeine, has been sold under this trade-mark name of "Coca-Cola" has been extensively advertised under this name, and has under this name become generally known to the trade and to consumers in the United States; that no other article of food or beverage has been either manufactured or sold under the name of Coca Cola, that it imitates no other article and is not sold under the distinctive name of any other article, and that this name

distinguishes this particular product from all other articles and beverages, clearly identifies it as a particular kind and brand of beverage made by its manufacturer and sold under this name, and distinguishes it from all other beverages or food products manufactured and sold by other persons.

I therefore find as a conclusion of law, from these facts, that the name "Coca Cola" is and was at the time this libel was filed a distinctive name which clearly distinguishes this particular compound from any other food product; and I further find from the undisputed facts in evidence that the "Coca Cola" sought to be condemned in this case is and was when the libel was filed, a compound known as an article of food under its own distinctive name; that it is and was not an imitation of or offered for sale under the distinctive name of any other article; that the name on the label is and was accompanied with a statement of the places where the article was manufactured; and that the caffeine which it contained is and was not an "added ingredient" within the meaning of the Food and Drugs Act, but is and was a usual and normal constituent of the article that had been and was known to the public under the distinctive name of "Coca Cola." And I therefore conclude that as a matter of law the Coca-Cola in question is not to be deemed as adulterated by the presence of caffeine as an "added" ingredient within the true intent and meaning of the Act.

The conclusion thus reached is strengthened by a consideration of the pleadings in this case. In the libel it is alleged that the food product "Coca Cola" which it was sought to condemn is adulterated in that it contained an "added ingredient" caffeine, which was and is both poisonous and deleterious, yet, the entire proof unquestionably shows that the caffeine contained in the article Coca-Cola is one of its regular, habitual, and essential constituents, and that without its presence, that is, if it were de-caffeinized, so to speak, the product would lack one of its essential elements and fail to produce upon the consumers a characteristic if not the most characteristic effect which is obtained from its use. In short Coca Cola without caffeine would not be "Coca Cola" as it is known to the public and would not produce the effect which the Coca Cola bought by the public under that name produces, and if it were sold as "Coca Cola" without containing caffeine the public buying it under this name would be in fact deceived.

The Government's contention then, under the proof, leads to this — there being, it is to be observed, no issue raised in the pleadings as to the amount of the caffeine

contained — that an entire compound containing a certain ingredient, which is one of its essential ingredients, and without which the compound would lose its characteristic qualities, is, as an entire compound, to be deemed adulterated because it contains such ingredient, on the theory that such ingredient is added to the compound, as distinguished from being contained in it as an essential constituent of the entire compound. It is different to see, however, how any part which is an essential of an entire article, and without which the entire article would not exist, can be, properly deemed to be added to the entire article, or, in short, to be added to the adulterate itself.

The case would be different of course, if the libel alleged that any other constituent of the compound, as for example the syrup, was sold as syrup, and in fact adulterated with caffeine. That, however, is not the case. The libel specifically alleges that the food product "Coca Cola" is adulterated by the addition of caffeine, and the proof unquestionably shows that the caffeine is not an addition to this compound, but is one of its essential and normal ingredients under the distinctive name under which it has been sold and is known to the public.

It results that in so far as the libel charges that Coca Cola is adulterated because it contains caffeine as an added ingredient, the Claimant's motion for peremptory instructions must be sustained.

2. It is also alleged in the libel that the name "Coca-Cola" as used on the label, suggests and represents the presence in this food product of Coca, meaning the leaves of the Coca plant, and that this product does not in fact contain any Coca in its composition, thereby constituting a false and misleading statement regarding the ingredients and substances contained in the "Coca-Cola."

Assuming, for the purpose of determining this motion that there may be a disputed question of fact as to whether the use of the word "Coca" in the name contained upon the label is to be regarded intrinsically and originally as a statement of suggestion of the presence in the product of the leaves of the Coca plant or of some material element or quality derived therefrom, and further assuming that there may be a conflict in the evidence as to whether or not there is contained in "Coca Cola" any portion of the leaves of the Cola plant or any substance or quality derived therefrom to any material degree, the preliminary question arises as to whether, upon the other undisputed facts in evidence these issues of fact shall be submitted to the jury for their determination, as questions of fact, or whether under the other undisputed evidence in the case, these allegations if

true, are, as a matter of law, immaterial.

Without stating my reasons in detail it is sufficient at this time to say that after careful consideration of the question I have, for reasons directly analogous to those which determined my conclusions in reference to the adulteration of an article sold under the distinctive name, concluded that it was the intention of Congress to provide that where a compound article of food was known under its own distinctive name, was not an imitation of any other article of food or sold under the distinctive name of any other article, was properly labeled as to the place of manufacture and contained no "added" poisonous or deleterious ingredient, it should not be deemed misbranded within the meaning of the Food and Drugs Act in so far as any statement of suggestion contained in the name itself is concerned. To hold otherwise would, in my opinion, involve an absolute and irreconciliable contradiction between the several clauses in Sec. 8 of the Act and would render meaningless the express provision of that section that a compound known as an article of food under its own distinctive name, not an imitation of or offered for sale under the distinctive name of another article, properly labeled with the place of manufacture, and not containing any added poisonous or deleterious ingredients, shall not be deemed to be mis-branded. Obviously if the article contains the same constituents as those normally and regularly contained under the distinctive name under which it is sold and under which it is known to the public, the distinctive name indicating this distinctive article, is not misleading, but on the contrary serves to directly inform the public that it is the specific article which the public knows under that name and desires to buy.

It results from the facts hereinbefore found from the undisputed evidence that in so far as the libel charges the misbranding of the Coca Cola by reason of any false statement of suggestion contained in the name itself, the claimant's motion for peremptory instructions must be sustained.

3. It also results from what has been heretofore stated that in so far as the libel charges that the Coca Cola is mis-branded because of being an imitation of or offered for sale under the distinctive name of another article, in the entire absence of evidence to show that this is the case, the claimant's motion for peremtory instructions in so far as this charge of the libel is concerned, must also be sustained.

4. With reference to the charge that the Coca-Cola was mis-branded by reason of being mixed, colored or stained by the use of coloring substance whereby damage or in-

feriority of the mixture was concealed, without expressing any opinion upon the weight of the evidence, I am of the opinion that the evidence is not so undisputed as to constitute the solution of this question a mere matter of law, but that this question should be left to the jury under the issues raised by the pleadings.

So far, therefore, as this charge in the libel is concerned, claimant's motion must be overruled.

5. As to the charge in the libel that the pictorial design of coca leaves on the labels is misleading in that it represents and suggests the presence of the substance coca in the "Coca Cola" product I have had great difficulty. While it is apparently true that under the provision of the Act heretofore quoted that no compound food product sold under its own distinctive name shall be deemed to be misbranded, when it contains no added poisonous or deleterious ingredient and is otherwise sold and labeled in accordance with the Act, it would aparently follow as a matter of the strict letter of the law that in the absence of any added poisonous or deleterious ingredient, a product thus sold under its distinctive name cannot be deemed mis-branded upon any ground. I have concluded, however, that giving a fair and reasonable construction to the somewhat conflicting provisions of the Act, it was only intended to protect an article sold under its distinctive name from the charge of mis-branding in so far as any statement or suggestion contained in the name itself is concerned, and that it was not intended to present the condemnation of the article as misbranded even though sold under its own distinctive name if in addition to such distinctive name the label contains other misleading statements, designs or devices. Without expressing any opinion as to whether the pictorial design on the label in question is misleading in any particular as to the presence of coca leaves or any ingredient or quality derived therefrom, I am of the opinion that under the evidence in the case this is not purely a question of law, but is a question of fact which, under all the evidence should be submitted to the jury for its determination. Therefore in so far as the charge of mis-branding based upon the pictorial design of coca leaves upon the label is concerned, the claimant's motion for peremptory instructions will be overruled.

To the extent hereinabove stated the claimant's motion for peremptory instructions is accordingly sustained; otherwise it is overruled.

Mr. Miller: It must have been patent from the outset that one of the primary questions in the case, in fact, the crucial question is that of the deleteriousness of the caf-

feine. I take it that no one who has gone through the trial or given even casual attention to it would think otherwise. Now, it is desired by the government to test this matter as speedily as possible. With that end in view, I ask leave to dismiss as to the two features, No. 4 and 5, in your Honor's opinion, and I trust you will not deem me undeferential if I ask an appeal at this time.

Mr. Sizer: I understand you dismiss as to both of those matters.

Mr. Miller: Yes, and we have a right to do it.

The Court: The motion for leave to dismiss is allowed. I think it is very proper that that should be done. The matter of appeal, of course, will be prepared in proper form.

Mr. Miller: I simply give notice of the fact.

The Court: I shall be glad to act on it. Of course the fundamental question is as to the construction of the statute.

Mr. Sizer: Then it follows that Your Honor directs a verdict for the Defendant.

The Court: Gentlemen of the jury, in pursuance of my action on the claimant's motion for peremptory instructions, and in consequence of the dismissal by the Government in open Court and in your presence of the two questions of disputed facts in the case, which I think ought to be submitted to you for your consideration, and in consequence of the fact that upon the other questions in the case upon the undisputed evidence in my opinion the Government is not entitled to a verdict at your hands, and in consequence of my action in sustaining the motion for a peremptory instruction as to such other grounds, I now direct you to return a verdict in favor of the claimant, the Coca Cola Company. You may return that without leaving your seats.

The Government then and there excepted to the action of the Court for the reasons more fully set forth in its motion for a new trial herein, and then further asked leave and was permitted to dismiss as to the matters embodied in the pleadings and dealt with in Items 4 and 5 of the trial Court's opinion.

Thereupon the Court directed a verdict for the Claimant, to which the Government excepted.

The Government, within the time and in the manner prescribed by law and rule of the Court, presented its motion for a new trial, which is in the words and figures following:

MOTION FOR NEW TRIAL.

Now comes the libellant, United States of America, by

attorney, and moves the Court to set aside the verdict and judgment in said cause and grant a new trial for the following reasons:

(1) The Court erred in peremptorily instructing the jury that the Coca Cola in controversy was not adulterated, as averred in the libel.

(2) The Court erred in its findings, conclusion and direction that the Coca Cola seized was not adulterated, the finding and direction in this behalf being substantially as follows:

> "And I therefore conclude that as a matter of law the Coca Cola in question is not to be deemed as adulterated by the presence of caffeine as an 'added' ingredient within the true intent and meaning of the Act. * * * It results that in so far as the libel charges that Coca Cola is adulterated because it contains caffeine as an added ingredient, the claimant's motion for peremptory instructions must be sustained."

(3) Whether or not caffeine was a deleterious or poisonous ingredient of the Coca Cola syrup, which might have rendered the product injurious to health, should have been submitted to the jury.

(4) The Court erred in its findings, conclusions and direction that the name "Coca Cola" did not constitute a representation of the presence in the product seized of the substances Coca and Cola, and hence that such product was mis-branded, the Court's conclusion in this behalf being:

> "It results from the facts hereinbefore found from the undisputed evidence, that in so far as the libel charges the mis-branding of the Coca Cola by reason of any false statement or suggestion contained in the name itself, the claimant's motion for peremptory instructions must be sustained."

(5) The Court erred in its findings, conclusion, and direction, that the Coca Cola seized was not offered for sale under the distinctive name of the substances Coca and Cola, one or both, as averred in the libel, its conclusion in this behalf being:

> "It also results from what has been heretofore stated that in so far as the libel charges that the Coca Cola is misbranded because of being an imitation of or offered for sale under the distinctive name of another article, in the entire absence of evidence to show that this is the case, the Claimant's motion for peremptory instructions in so far as this charge of the libel is concerned, must also be sustained."

(6) The Court erred in its conclusion that "in so far

as any statement or suggestion contained in the name itself is concerned," the product seized was not misbranded.

(7) The Court erred in its failure and refusal to submit the case to the jury on issues 1, 2, 4, 5, 6, 7, 8, and 9, submitted by libellant.

(8) The Court erred in finding and holding that "the name Coca Cola is a trade name which has for many years been given by the manufacturer to the food product in question and upon which name a trade mark was many years ago obtained; that this food product is an artificial compound used in the preparation of beverages, consisting of a sweet syrup, colored with caramel, with some phosphoric acid, lemon juice and other minor ingredients, with perhaps some ingredients or qualities derived from the Coca leaves and the Cola nuts, which are used to a certain extent after being subjected to a process by which the cocaine and other certain ingredients are extracted, and also containing as an essential ingredient of the compound caffeine obtained in the main by chemical extraction from theine, that this compound has for many years manufactured under a formula prescribing certain definite proportions of such caffeine as one of its essential ingredients; that for many years as so manufactured and sold it has regularly and habitually contained the same approximate amount of caffeine, being about 1-1/5 grains to each fluid ounce of the syrup, although slightly less caffeine is contained in the syrup prepared for use in bottles than in that prepared for use at soda fountains; * * * that for many years this compound containing such caffeine has been sold under this trade mark name of Coca Cola, has been extensively advertised under this name, and has under this name become generally known to the trade and to consumers in the United States; * * * that this name distinguishes this particular product from all other beverages and articles and clearly identifies it as a particular kind and brand of beverage made by its manufacturer and sold under this name, and distinguishes it from all other beverages or food products manufactured and sold by other persons," — because the undisputed proof shows that cocaine in appreciable quantities was used in this mixture up to about 1904, and was then taken out of the mixture, so that the ingredients have not been the same or substantially the same since the use of cocaine was dispensed with.

The finding aforesaid, that the mixture contains "perhaps some ingredients or qualities derived from the Coca leaves and Cola nuts, which are used to a certain extent in its preparation after being subjected to a process by which the Cocaine and certain other ingredients are extracted is

erroneous in that (a) up to about 1904, all the cocaine was not extracted, but, on the contrary, an appreciable quantity was contained in the mixture, and (b) none of the ingredients contained in the mixture impart to it either an appreciable quantity or desirable quality of Coca or Cola.

(9) The Court erroneously found and held in substance that for a long number of years Coca Cola has been made according to the same formula.

(10) The Court erroneously found and held that Coca Cola "imitates no other article and is not sold under the distinctive name of any other article, for this, that the name itself implies a mixture or compound of an appreciable quantity of Coca and Cola, imparting to the product seized a substantial or desirable quality of both said substances Coca and Cola.

(11) The Court erroneously found and held that the name Coca Cola "distinguishes this particular product from all other beverages and articles," for this, that said name does not distinguish the product from any other mixture or compound composed of Coca and Cola.

(12) The Court erroneously found and held that if Coca Cola "were sold as Coca Cola without containing caffeine, the public buying it under this name would in fact be deceived," for this, that there is no proof sustaining this conclusion, or at least the proof cannot be said to be undisputed in this respect.

(13) The Court erroneously found and held that the mixture of Coca-Cola seized "has been extensively advertised under this name, and has under this name become generally known to the trade and to consumers in the United States," for this, (a) that the mixture advertised and sold under the name Coca Cola prior to about 1904, contained an appreciable quantity of cocaine, and since that time the cocaine has been removed therefrom; and (b) the proof is not undisputed that the mixture in question has "become generally known — to consumers in the United States," as a caffeine containing drink.

(14) The Court erroneously found and held that — "In short, Coca Cola without caffeine would not be coca cola as it is known to the public, and would not produce the effect which the Coca Cola bought by the public under that name produces, and if it were sold as Coca Cola without containing caffeine, the public buying it under this name would be in fact deceived," * * * for this, that the undisputed proof does not support such finding.

This motion is based on the records and files in the cause and the testimony taken on the trial thereof.

THE UNITED STATES.
By JAMES B. COX, U. S. Dist. Atty.
W. B. MILLER,
Special Assistant to the Attorney General.
(Endorsed) Filed, April 15th, 1911.
R. M. WATKINS, Dep. Clerk.

The Government thereupon tenders this, its Bill of Exceptions to the Judgment of the Court directing a verdict against it and overruling its motion for new trial, which is signed, sealed and ordered to be made a part of the record.

This July 10th, 1911.

EDWARD T. SANFORD, Judge.

O. K. — J. B. SIZER, for Claimant.
(Endorsed) Bill of Exceptions.
Filed July 11, 1911.
R. M. WATKINS, Dep. Clerk.

IN THE
DISTRICT COURT OF THE UNITED STATES,
EASTERN DISTRICT OF TENNESSEE,
SOUTHERN DIVISION.

United States
vs.
Forty Barrels and Twenty Kegs Coca-Cola. } No. 53.

MEMORANDUM OPINION AS TO MOTION FOR NEW TRIAL AND BILL OF EXCEPTIONS.

The libellant's motion for new trial, with the briefs, has been forwarded to me at Nashville for adjudication, but owing to the pressure of other work requiring immediate attention, I have been unable to take up and consider the motion for new trial. I have, therefore, concluded that in order that the rights of neither party may be prejudiced by this delay, an order should be entered reciting that the motion for new trial has been taken under advisement by the Court and its determination continued to the next term, and further providing that the cause is continued to the next term for the purpose of acting on the motion for new trial, and also for the purpose of settling, allowing, signing and filing any bills of exception that may be presented by either party herein. See Ward v. Cochran, 150 U. S., 597, 603; Minahan v. Grand Trunk R. Co. (C. C. A., 6), 138 Fed., 37. I have accordingly signed such an order for entry by the Clerk.

(Signed) SANFORD, Judge.

May 16, 1911.

TUESDAY MORNING, MAY 16, 1911.

Court met pursuant to adjournment.

Present and presiding the Honorable Edward T. Sanford, Judge of the United States District Court for the Eastern and Middle Districts of Tennessee.

United States
vs.
40 Barrels and 20 Kegs Coca-Cola. } No. 53.

In this cause, the libellant's motion for new trial having been taken under advisement by the Court, this cause is continued to the next term of this Court for the purpose of acting upon said motion for new trial and entering any further orders or decrees that may be necessary in consequence of any action that may be taken on such motion for new trial, and also for the purpose of settling, allowing, signing and filing any bills of exception that may be presented by either the libellant or the claimant after action has been taken on said motion for new trial.

May 16, 1911. Enter:

SANFORD, Judge.

IN THE
DISTRICT COURT OF THE UNITED STATES,
EASTERN DISTRICT OF TENNESSEE,
SOUTHERN DIVISION.

United States
vs.
Forty Barrels and Twenty Kegs Coca-Cola. } No. 53.

ORDER.

In this cause the motion of the libellant to set aside the verdict and judgment and award a new trial is, upon consideration, overruled and disallowed. To the action of the Court in overruling said motion the libellant then and there excepted.

It is further ordered that the decree heretofore entered in this cause adjudging all costs against the libellant be and the same is hereby so modified and corrected as to adjudge and provide that no costs be taxed against the libellant and that the claimants pay its own costs in this cause.

DISTRICT COURT OF UNITED STATES,
SOUTHERN DIVISION,
EASTERN DISTRICT OF TENNESSEE.

United States
vs.
Forty Barrels and Twenty Kegs Coca-Cola. } No. 53.

PETITION FOR WRIT OF ERROR.

Now comes the United States of America, above Libellant, and says that on or about April 6, 1911, this Court entered judgment herein in favor of The Coca-Cola Company, intervenor in above cause, and against this Libellant, dismissing the above suit; and subsequently, in legal manner and form, this libellant entered a motion for a new trial herein, which motion was held under advisement until about June 8, 1910, when it was over-ruled and disallowed, to which this libellant, petitioner, excepted, and thereupon final judgment was entered herein on June 8th, last.

In said judgment and the proceedings had both prior and subsequent thereto and in the over-ruling of said motion for a new trial, certain errors were committed to the prejudice of this petitioner, all of which will more in detail appear from the Assignment of Errors which is filed herewith.

Wherefore, petitioner prays that a Writ of Error may issue in this behalf out of the United States Circuit Court of Appeals for the Sixth Circuit for the correction of errors so complained of; and that a transcript of the record proceedings and papers in this cause, duly authenticated, may be sent to the said Circuit Court of Appeals.

THE UNITED STATES OF AMERICA.
By JAMES B. COX, U. S. District Atty.
W. B. MILLER,
Special Assistant Attorney General.

DISTRICT COURT OF UNITED STATES,
SOUTHERN DIVISION,
EASTERN DISTRICT OF TENNESSEE.

United States
vs.
Forty Barrels and Twenty Kegs Coca-Cola. } No. 53.

ASSIGNMENT OF ERRORS.

The United States of America, above libellant, in connection with its petition for a writ of error herein, makes the following assignment of errors, which it avers occurred upon the trial of this cause, to-wit:

I.

The Court erred in peremptorily instructing the jury that the Coca-Cola in controversy was not adulterated, as averred in the Libel.

II.

The Court erred in its findings, conclusion and direction

that the Coca-Cola seized was not adulterated, the finding and direction in this behalf being substantially as follows:

> "And I therefore conclude that as a matter of law the Coca-Cola in question is not to be deemed as adulterated by the presence of caffeine as an 'added' ingredient within the true intent and meaning of the act. * * * * It results that in so far as the libel charges that Coca-Cola is adulterated because it contains caffeine as an added ingredient, the claimant's motion for peremptory instructions must be sustained."

III.

Whether or not caffeine was a deleterious or poisonous ingredient of the Coca-Cola syrup which might have rendered the product injurious to health, should have been submitted to the jury.

IV.

The Court erred in its findings, conclusions and direction that the name "Coca-Cola" did not constitute a representation of the presence in the product seized of the substances Coca and Cola, and hence that such product was misbranded, the Court's conclusion in this behalf being:

> "It results from the facts hereinbefore found from the undisputed evidence, that in so far as the libel charges the mis-branding of the Coca-Cola by reason of any false statement or suggestion contained in the name itself, the claimant's motion for peremptory instructions must be sustained."

V.

The Court erred in its findings, conclusion and direction that the Coca-Cola seized was not offered for sale under the distinctive name of the substances Coca and Cola, one or both, as averred in the libel, its conclusion in this behalf being:

> "It also results from what has been heretofore stated that in so far as the libel charges that the Coca-Cola is mis-branded because of being an imitation of or offered for sale under the distinctive name of another article, in the entire absence of evidence to show that this is the case, the Claimant's motion for peremptory instructions in so far as this charge of the libel is concerned, must also be sustained."

VI.

The Court erred in its conclusion that "in so far as any statement or suggestion contained in the name itself is concerned," the product seized was not mis-branded, in

that the name suggests an appreciable quantity and quality of both Coca and Cola, which suggestion presented a question of fact that should have been submitted to the jury.

VII.

The Court erred in its failure and refusal to submit the case to the jury on issues 1, 2, 4, 5, 6, 7, 8, and 9, submitted by libellant.

VIII.

The Court erred in finding and holding that

> "the name Coca-Cola is a trade name which has for many years been given by the manufacturer to the food product in question and upon which name a trade-mark was many years ago obtained; that this food product is an artificial compound used in the preparation of beverages, consisting of a sweet syrup, colored with caramel, with some phosphoric acid, lemon juice and other minor ingredients, with perhaps some ingredients or qualities derived from the Coca leaves and Cola nuts, which are used to a certain extent after being subjected to a process by which the cocaine and certain other ingredients are extracted, and also containing as an essential ingredient of the compound caffeine, obtained in the main by chemical extraction from thein; that this compound has been for many years manufactured under a formula prescribing certain definite proportions of such caffeine as one of its essential ingredients; that for many years as so manufactured and sold it has regularly and habitually contained the same approximate amount of caffeine, being about 1 1/5 grains to each fluid ounce of the syrup, although slightly less caffeine is contained in the syrup prepared for use in bottles than in that prepared for use at soda fountains; * * * that for many years this compound containing such caffeine has been sold under this trade-mark name of Coca-Cola, has been extensively advertised under this name, and has under this name become generally known to the trade and to consumers in the United States; * * * that this name distinguishes this particular product from all other beverages and articles and clearly identifies it as a particular kind and brand of beverages made by its manufacturer and sold under this name, and distinguishes it from all other beverages or food products manufactured and sold by other persons", —

because the undisputed proof shows that cocaine in appreciable quantities was used in this mixture up to about

1904, and was then taken out of the mixture, so that the ingredients have not been the same or substantially the same since the use of cocaine was dispensed with.

The finding aforesaid that the mixture contains "perhaps some ingredients or qualities derived from the Coca leaves and Cola nuts, which are used to a certain extent in its preparation after being subjected to a process by which the cocaine and certain other ingredients are extracted", is erroneous, in that (a) up to about 1904 all the cocaine was not extracted, but, on the contrary, an appreciable quantity was contained in the mixture, and (b) none of the ingredients contained in the mixture impart to it either an appreciable quantity or desirable quality of Coca or Cola.

Wherefore, the case should have been submitted to the jury upon the issues shown and presented above.

IX.

The Court erroneously found and held in substance that for a long number of years Coca-Cola had been made according to the same formula.

X.

The Court erroneously found and held that Coca-Cola "imitates no other article and is not sold under the distinctive name of any other article, for this, that the name itself implies a mixture or compound of an appreciable quantity of Coca and Cola, imparting to the product seized a substantial or desirable quality of both said substances Coca and Cola.

XI.

The Court erroneously found and held that the name Coca-Cola "distinguished this particular product from all other beverages and articles", for this, that said name does not distinguish the product from any other mixture or compound composed of Coca and Cola.

XII.

The Court erroneously found and held that if Coca-Cola "were sold as 'Coca-Cola' without containing caffeine, the public buying it under this name would be in fact deceived", for this, that there is no proof sustaining this conclusion, or at least the proof cannot be said to be undisputed in this respect.

XIII.

The Court erroneously found and held that the mixture of Coca-Cola seized "has been extensively advertised under this name, and has under this name become generally

known to the trade and to consumers in the United States," for this, (a) that the mixture advertised and sold under the name Coca-Cola prior to about 1904, contained an appreciable quantity of cocaine, and since that time the cocaine has been removed therefrom; and (b) the proof is not undisputed that the mixture in question has "become generally known * * * * * to consumers in the United States" as a caffeine-containing drink.

XIV.

The Court erroneously found and held that —

> "In short, Coca-Cola without caffeine would not be Coca-Cola as it is known to the public, and would not produce the effect which the Coca-Cola bought by the public under that name produces, and if it were sold as Coca-Cola without containing caffeine, the public buying it under this name would be in fact deceived," —

for this, that the undisputed proof does not support such finding. But, on the contrary, a controverted question of fact in this respect is presented which should have been submitted to the jury.

XV.

The Court erred in directing a verdict for the Coca-Cola Company.

Wherefore, petitioner (libellant) prays that the judgment of the District Court be reversed.

THE UNITED STATES OF AMERICA,
By JAMES B. COX, U. S. District Attorney.
W. B. MILLER,
Special Assistant Attorney General.

DISTRICT COURT OF UNITED STATES,
SOUTHERN DIVISION,
EASTERN DISTRICT OF TENNESSEE.

United States
vs.
Forty Barrels and Twenty Kegs Coca-Cola. } No. 53.

On this 21st day of November, 1911, came above libellant through its attorney and filed herein and presented to the Court its petition praying for the allowance of a writ of error on an assignment of errors intended to be urged by it, praying also that a transcript of the record and proceedings and papers upon which the judgment herein was rendered, duly authenticated, may be sent to the United States Circuit Court of Appeals for the Sixth Judicial Circuit,

and that such other and further proceedings may be had as may be proper in the premises, on consideration whereof the Court does allow the writ of error.

EDWARD T. SANFORD,
U. S. District Judge.

O. K. — W. B. MILLER.
J. B. SIZER.
See R. S. (U. S.), Sect. 1001.

WRIT OF ERROR.

UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

United States of America, }
Sixth Judicial Circuit, } ss:

The President of the United States,
To the Honorable the Judge of the.....Court of the United States for the.....District of.....

Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the said District Court, before you, or some of you, between United States of America and 40 Barrels and 20 Kegs of Coca-Cola a manifest error hath happened, to the great damage of the said United States of America, as by its complaint appears. We being willing that error, if any hath been, should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if the judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the United States Circuit Court of Appeals for the Sixth Circuit, together with this writ, so that you have the same at Cincinnati, in said Circuit, on the *23rd day of December, next, in the said Circuit Court of Appeals, to be then and there held, that the record and proceedings aforesaid being inspected, the said Circuit Court of Appeals may cause further to be done therein to correct that error, what of right, and according to the laws and customs of the United States, should be done.

(Seal) WITNESS the Honorable Edward D. White, Chief Justice of the United States, the 24th day of November, in the year of our Lord one thousand nine hundred and eleven, and of the Independence of the United States of America the

one hundred and thirty-fifth.

HORACE VANDEVENTER,
Clerk of the District Court of the United States.
By R. M. WATKINS, Deputy Clerk.

Allowed by
EDWARD T. SANFORD, U. S. Dist. Judge.

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* Not exceeding 30 days from the day of signing the citation.

CITATION.

United States of America, } ss:
Sixth Judicial Circuit, }

The President of the United States to The Coca-Cola Company,

Greeting:

You are hereby cited and admonished to be and appear at a session of the United States Circuit Court of Appeals for the Sixth Circuit, to be holden at the City of Cincinnati in the said Circuit Court on the 23rd day of December next, pursuant to a writ of error filed in the Clerk's office of the District Court of the United States for the Eastern District of Tennessee, and also an order allowing such writ of error, wherein the United States is plaintiff in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error, as in the writ of error mentioned, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable E. T. Sanford, Judge of the United States District Court in and for the Eastern District of Tennessee, this 25th day of November, 1911.

EDWARD T. SANFORD,
United States District Judge.

Attest:
R. M. WATKINS, Deputy Clerk.

We hereby this 8th day of December, 1911, accept due personal service of this citation on behalf the Coca-Cola Company, appellee.

J. B. SIZER, Attorney.

ASSIGNMENT OF ERROR.

And now comes said Libellant and says that in the record and proceedings in this cause and in the final decree and judgment herein, there is manifest error in the following, — and other particulars: —

I.

The Court erred in peremptorily instructing the jury

that the Coca Cola in controversy was not adulterated, as averred in the libel.

II.

The Court erred in its findings, conclusion and direction that the Coca Cola seized was not adulterated, the finding and direction in this behalf being substantially as follows:

> "And I therefore conclude that as a matter of law the Coca Cola in question is not to be deemed as adulterated by the presence of caffeine as an 'added' ingredient within the true intent and meaning of the Act. * * * * It results that in so far as the libel charges that Coca Cola is adulterated because it contains caffeine as an added ingredient, the claimant's motion for peremptory instructions must be sustained."

III.

Whether or not caffeine was a deleterious or poisonous ingredient of the Coca Cola syrup which might have rendered the product injurious to health, should have been submitted to the jury.

IV.

The Court erred in its findings, conclusions and direction that the name "Coca Cola" did not constitute a representation of the presence in the product seized of the substances Coca and Cola, and hence, that such product was mis-branded, the Court's conclusion in this behalf being:

> "It results from the facts hereinbefore found from the undisputed evidence, that in so far as the libel charges the mis-branding of the Coca Cola by reason of any false statement or suggestion contained in the name itself, the claimant's motion for peremptory instructions must be sustained."

V.

The Court erred in its findings, conclusions and direction that the Coca Cola seized was not offered for sale under the distinctive name of the substances Coca and Cola, one or both, as averred in the libel, its conclusion in this behalf being:

> "It also results from what has been heretofore stated that in so far as the libel charges that the Coca Cola is mis-branded because of being imitation of or offered for sale under the distinctive name of another article, in the entire absence of evidence to show that this is the case, the claimant's motion for peremptory instructions in so far as the charge of the libel is concerned, must also be sustained."

VI.

The Court erred in its conclusion that "in so far as any statement or suggestion contained in the name itself is concerned", the product seized was not mis-branded, in that the name suggests an appreciable quantity and quality of both Coca and Cola, which suggestion presented a question of fact that should have been submitted to the jury.

VII.

The Court erred in its failure and refusal to submit the case to the jury on issues 1, 2, 4, 5, 6, 7, 8 and 9, submitted by Libellant.

VIII.

The Court erred in holding that "the name Coca Cola is a trade name which has for many years been given by the manufacturer to the food product in question and upon which name a trade mark was many years ago obtained; that this food product is an artificial compound used in the preparation of beverages, consisting of a sweet syrup, colored with caramel, with some phosphoric acid, lemon juice and other minor ingredients, with perhaps some ingredients or qualities derived from the Coca leaves and Cola nuts, which are used to a certain extent after being subjected to a process by which the cocaine and certain other ingredients are extracted, and also containing as an essential ingredient of the compound caffeine, obtained in the main by chemical extraction from thein; that this compound has been for many years manufactured under a formula prescribing certain definite proportions of such caffeine as one of its essential ingredients; that for many years as so manufactured and sold it has regularly and habitually contained the same approximate amount of caffeine, being about one and one-fifth grains to each fluid ounce of the syrup although slightly less caffeine is contained in the syrup for use at soda fountains; * * * that for many years this compound containing such caffeine has been sold under this trade mark name of Coca-Cola, has been extensively advertised under this name, become generally known to the trade and to consumers in the United States; * * * * that this name distinguishes this particular product from all other beverages and articles and clearly identifies it as a particular kind and brand of beverages made by its manufacturer and sold under this name, and distinguishes it from all other beverages or food products manufactured and sold by other persons", because the undisputed proof shows that cocaine in appreciable quantities was used in this mixture up to about 1904, and was then taken out of the mixture, so that the ingredients

have not been the same or substantially the same since the use of caffeine was dispensed with.

The finding aforesaid that the mixture contains "perhaps some ingredients or qualities derived from the Coca leaves and Cola nuts, which are used to a certain extent in its preparation after being subjected to a process by which cocaine and other certain ingredients are extracted", is erroneous, in that (a) up to about 1904 all the cocaine was not extracted but, on the contrary, an appreciable quantity was contained in the mixture, and (b) none of the ingredients contained in the mixture impart to it either an appreciable quantity or desirable quality of Coca or Cola.

Wherefore the case should have been submitted to the jury upon the issues shown and presented above.

IX.

The Court erroneously found and held in substance that for a long number of years Coca Cola has been made accordingly to the same formula.

X.

The Court erroneously found and held that "Coca Cola" imitates no other article and is not sold under the distinctive name of any other article, for this, that the name itself implies a mixture or compound of an appreciable quantity of Coca Cola, imparting to the product seized a substantial or desirable quality of both said substances Coca and Cola.

XI.

The Court erroneously found and held that the name Coca Cola "distinguished this particular product from all other beverages and articles", for this, that said name does not distinguish the product from any other mixture or compound composed of Coca and Cola.

XII.

The Court erroneously found and held that if Coca Cola "were sold as Coca Cola without containing caffeine the public buying it under this name would be in fact deceived", for this, that there is no proof sustaining this conclusion or at least the proof cannot be said to be undisputed in this respect.

XIII.

The Court erroneously found and held that the mixture of Coca Cola seized "has been extensively advertised under this name, and has under this name become generally known to the trade and to consumers in the United States," for this (a) that the mixture advertised and sold

under the name Coca Cola prior to about 1904, contained an appreciable quantity of cocaine, and since that time the cocaine has been removed therefrom; and (b) the proof is not undisputed that the mixture in question has "become generally known * * * * * to consumers in the United States" as a caffeine-containing drink.

XIV.

The Court erroneously found and held that — "In short, Coca Cola without caffeine would not be Coca Cola as it is known to the public, and would not produce the effect which the Coca Cola bought by the public under that name produces, and if it were sold as Coca Cola without containing caffeine, the public buying it under this name would be in fact deceived," — for this, that the undisputed proof does not support such finding, but on the contrary, a controverted question of fact in this respect is presented which should have been submitted to the jury.

XV.

The Court erred in directing a verdict for the Coca Cola Company.

Wherefore the said Libellant prays that for the aforesaid errors found in the record of said cause and said decree, the same may be reversed and a decree and judgment entered herein in accordance with the prayer of the information, and for such other and further relief as may be proper in the premises.

THE UNITED STATES OF AMERICA,
By JAMES B. COX, U. S. District Atty.

W. B. MILLER,
Special Assistant Attorney General.

(Endorsed). Filed, December 5th, 1911.
R. M. WATKINS, Dep. Clerk.

The above named Libellant conceiving itself aggrieved by the decree made and entered herein on the 8th day of June, 1911, does hereby appeal from said order and decree to the U. S. Circuit Court of Appeals for the Sixth Circuit, for the reasons specified in the assignment of errors which is filed herewith, and prays that this appeal may be allowed, and that a transcript of the record, proceedings and papers — including the Bill of Exceptions herein — upon which said order was made, duly authenticated, may be sent to the U. S. Circuit Court of Appeals for the Sixth Circuit.

Dated December 5th, 1911.

THE UNITED STATES OF AMERICA,

By JAMES B. COX, U. S. Dist. Attorney.
W. B. MILLER,
Special Assistant Attorney General.

The foregoing claim of appeal is allowed this Dec. 5th, 1911.

EDWARD T. SANFORD, Judge.

O. K. — SIZER.

To the Coca Cola Company:

Whereas, the United States of America, above Libellant, has lately appealed to the United States Circuit Court of Appeals for the Sixth Circuit from a decree lately rendered in the District Court of United States for the Southern Division of the Eastern District of Tennessee, made in favor of you in the above styled cause; you are hereby cited to appear before the said Circuit Court of Appeals at the City of Cincinnati on the 4th day of January next to do and receive what may appertain to justice to be done in the premises.

Given under my hand at the City of Chattanooga, in the Sixth Circuit, this 5th day of December, in the year of our Lord one thousand nine hundred and eleven.

EDWARD T. SANFORD,
Judge of the District Court of the United States
for the Eastern District of Tennessee.

Service accepted and duly acknowledged as if served by an officer, this December 7th, 1911.

THE COCA COLA COMPANY.
By J. B. SIZER, Atty.

(Filed). December 5th, 1911.
R. M. WATKINS, Dep. Clerk.

ORDER EXTENDING TIME.

For satisfactory reasons appearing to the Court, the time for filing the record in this cause in the Circuit Court of Appeals, pursuant to both the appeal and writ of error sued out herein, is extended until the 22nd day of January, 1912.

This December 22nd, 1911.

EDWARD T. SANFORD, District Judge.

(Endorsed). Order extending time.
Filed, December 22nd, 1911.
R. M. WATKINS, Dep. Clerk.

ORDER EXTENDING TIME.

For satisfactory reasons appearing to the Court, the time for filing the record in this cause in the Circuit Court of Appeals, pursuant to both the appeal and Writ of error

sued out herein, is extended until the 24th day of February, 1912.

This January 17th, 1912.

SANFORD, District Judge.

(Endorsed). Order extending time.
Filed, January 17th, 1912.

R. M. WATKINS, Dep. Clerk.

ORDER EXTENDING TIME.

In this cause, for sufficient reasons, the Libellant is allowed an additional extension of sixty days in which to prepare and file transcript of the record in the United States Circuit Court of Appeals at Cincinnati.

Approval for entry:

SANFORD, Judge.

February 21st, 1912.
(Endorsed). Order extending time.
Entered and filed, February 21st, 1912.

By R. M. WATKINS, Dep. Clerk.

ORDER EXTENDING TIME.

For satisfactory reasons appearing to the Court, the time in which to prepare and transmit to the Circuit Court of Appeals at Cincinnati, the transcript of the record in this case, is extended sixty (60) days.

This 5th day of April, 1912.

Approved for entry:

SANFORD, Judge.

(Endorsed). Filed, April 5th, 1912.

R. M. WATKINS, Dep. Clerk.

United States
vs.
Forty Barrels and Twenty Kegs Coca-Cola. } No. 53.

The time for preparing and filing the transcript of the record, in this case, in the Circuit Court of Appeals at Cincinnati, is extended sixty days.

June 7th, 1912.

Approved for entry:

SANFORD, Judge.

(Endorsed). Order extending time.
Filed June 7, 1912.

By R. M. WATKINS, Dep. Clerk.

1922 PROCEEDINGS IN THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

PETITION TO ADVANCE CAUSE.

(Filed Oct. 7, 1913.)

United States Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA, PLAINTIFF IN error, *v.* FORTY BARRELS AND TWENTY KEGS OF Coca Cola, defendant in error.	No. 2415 from the Eastern District of Tennessee.

Petition of plaintiff in error to advance cause for hearing.

To the honorable court:

Now comes above plaintiff in error, as petitioner, and respectfully shows—

(1) That this controversy presents for construction the food and drugs act of June 30. 1906, in three important particulars, to wit:

(a) What the signification of and what construction to be given the word "added" in section 7, subsection 5th of said act, which declares a food adulterated—

"If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health."

1923 (b) What the true intent and meaning of section 8, subsection 1, of said act, declaring a food misbranded—

"If it be an imitation of or offered for sale under the name of another article."

(c) The true intent and meaning of the phrase "Their own distinctive names" as used in section 8, subsection 4, proviso 1st, of said act with respect to mixtures or compounds "known as articles of food under their own distinctive names."

(2) This controversy was tried below in April, 1911, to which time the Government officials specially charged by the terms of said act with the enforcement thereof, together with their subordinates, had given an interpretation and construction to the portions thereof above shown quite at variance with the construction and interpretation given and adjudged by the trial court and in direct conflict therewith.

(3) Wherefore, since the date of said judgment much confusion and embarrassment have resulted and will continue until a final determination of the present controversy, to the detriment of the public service and confusing alike to the department officials charged with the execution of said act and to the manufacturers and

1924 dealers affected thereby.

(4) Petitioner presents herewith, endorsed below, a waiver of the five days' notice to opposing counsel, as provided by rule 3 of this honorable court.

The premises seen, petitioner prays, for the reasons above, this cause be advanced for hearing on Wednesday, October 15, 1913, or as speedily thereafter as consistent, and for general relief.

Respectfully submitted.

LEWIS M. COLEMAN,
U. S. District Attorney for the Eastern District of Tennessee.
W. B. MILLER,
Special Assistant to the Attorney General.

STATE OF TENNESSEE,
Hamilton County:

Personally appeared before the undersigned authority Lewis M. Coleman and W. B. Miller, who, being sworn, depose and say that they are attorneys for the foregoing petitioner and that the statements contained in the above petition are true to the best of their knowledge, information, and belief.

LEWIS M. COLEMAN.
W. B. MILLER.

1925 Sworn to and subscribed before me this October 6, 1913.

[SEAL.] W. H. NORVELL,
Notary Public.

The defendant in error in the foregoing petition hereby waives the five days' notice prescribed by rule 3 of the court, and agrees that that foregoing application may be at once presented for consideration.

Defendant in error also acknowledges the receipt of a copy of said petition.

J. B. SIZER,
Atty. for Defendant in Error.

This October 6, 1913.

Endorsement. Petition of plaintiff in error to advance cause for hearing. Filed Oct. 7, 1913. Frank O. Loveland, clerk.

TELEGRAM ATTACHED TO PETITION.

(Received Oct. 7, 1913.)

64 BM RS 36 Govt Delivery No. 766.

Chattanooga Tenn Oct 7 13

Mr. FRANK O. LOVELAND
Clerk U. S Court of Appeals Cincinnati O

Apropos petition advance hearing Coca Cola case please advise court all counsel join in request for hearing Thursday October sixteenth.

W. B. MILLER
Special Assistance

1926 ENTRY—PETITION TO ADVANCE SUBMITTED.

(Oct. 7, 1913.)

United States Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA
v. #2415.
THE COCA-COLA COMPANY.

Motion to advance this cause for hearing is submitted.

ORDER ADVANCING CAUSE.

(Filed Oct. 8, 1913.)

United States Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA, PLAINTIFF in error,
vs. #2415. Order.
THE COCA-COLA COMPANY, DEFENDANT in error.

Motion to advance this cause for hearing is granted, and the case is assigned for argument at the opening of the November session, after cases already set for hearing at that session, on condition that briefs be filed as follows, viz, for the plaintiff in error on or before October 14th, for the defendant in error on or before October
1927 25th, and reply brief for plaintiff in error on or before November 1st, 1913.

Approved.

WARRINGTON, *Cir. J.*

ENTRY—CAUSE ARGUED AND SUBMITTED.

(Nov. 10, 1913. Before Warrington, Knappen, and Denison, circuit judges.)

United States Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA
vs. #2415.
THE COCA-COLA COMPANY.

This cause is argued by Mr. W. B. Miller and Mr. Lewis M. Coleman for the United States and by Mr. J. B. Sizer and Mr. Harold Hirsch for the Coca-Cola Company and is submitted to the Court.

JUDGMENT.

(Entered June 13, 1914.)

United States Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA
vs.
THE COCA-COLA COMPANY. } #2415.

Error to and appeal from the District Court of the United
1928 States for the Eastern District of Tennessee.

This cause came on to be heard on the transcript of the record from the District Court of the United States for the Eastern District of Tennessee and was argued by counsel.

On consideration whereof it is now here ordered and adjudged by this court that the judgment of the said district court in this cause be, and the same is hereby, affirmed.

Endorsement. No. 2415. United States Circuit Court of Appeals for the Sixth Circuit. United States of America vs. The Coca-Cola Company. Judgment. Filed June 13, 1914. Frank O. Loveland, clerk.

OPINION.

(Filed June 13, 1914.)

1929 No. 2415.

United States Circuit Court of Appeals, Sixth Circuit.

UNITED STATES OF AMERICA, PLAINTIFF IN ERROR,
v.
FORTY BARRELS AND TWENTY KEGS OF COCA COLA, defendant in error. } Error from the District Court of the United States for the Eastern District of Tennessee.

Submitted November 10, 1913. Decided June 13, 1914.

Before Warrington, Knappen, and Denison, circuit pudges.

DENISON, Circuit Judge. This proceeding was brought by the United States to condemn a quantity of syrup called Coca Cola. Forfeiture was claimed under the pure food law (34 U. S. S. L., 768), because the syrup was said to be adulterated and misbranded. The case was tried at great length before a jury; at the conclusion of the trial, the Government withdrew certain issues, and upon the two remaining matters, the court instructed a verdict for the Coca Cola Company, the claimant of the property. The sole question presented by this writ of error is whether there was any evidence tending to show that the article was either adulterated or misbranded within the prohibition of the act. The facts presented and the

questions involved are so well set out by the district judge in his carefully prepared opinion (191 Fed. Rep., 431)[1] that we refrain from further preliminary statement. The sections and clauses of the act which it seems may have some bearing on the question before us are given in the margin.[2]

1930 In applying a statute to particular facts and where it becomes necessary to construe language to which opposing sides give different meanings, it is vital to have in mind the essential scope and purpose of the act. The present case well illustrates the importance of this consideration. Much of the Government's contention as to the extent of the prohibitions here found rests upon the theory that Congress intended to protect the public health by preventing (to the extent of the constitutional power resting in the commerce clause) the sale or transportation of deleterious foods. The opposing contention denies this broad purpose and concedes only the intent to prevent any fraud or deception in the sale of foods. The title to the act is broad enough to support the Government's utmost claim as to general purpose. It is, "An act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, etc." If there was nothing in the

[1] The parts of the libel voluntarily dismissed by the Government were those matters numbered 4 and 5 in the district judge's opinion; the statement on page 440 of 191 Fed. Rep. is erroneous in this respect.

[2] SEC. 6. * * * the term "food," as used herein, shall include all articles used for food, drink, confectionery or condiments, by man or other animals, whether simple, mixed or compound.

SEC. 7. That, for the purposes of this act, an article shall be deemed to be adulterated * * * in the case of food * * * third, if any valuable constituent of the article has been wholly or in part abstracted * * * fifth, if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health.

SEC. 8. That the term "misbranded" as used herein, shall apply to all drugs or articles of food or articles which enter into the composition of food, the package or label of which shall bear any statement, design or device regarding such article or ingredients or substance contained therein which shall be false or misleading in any particular * * * that for the purposes of this act, an article shall also be deemed to be misbranded * * * in the case of food: First, if it be in imitation of or offered for sale under the distinctive name of another article. Second, if it be labelled or branded so as to deceive or mislead the purchaser * * * or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, heroin, alpha or beta eucane, chloroform, cannabis indica, chloral hydrate or acetanilid or any derivative or proportion of any such substances contained therein * * * Fourth, if the package containing it or its label shall bear any statement, design or device regarding the ingredients or the substance contained therein, which statement, design or device shall be false or misleading in any particular: provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases: First, in the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food under their own distinctive names and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced. Second, * * * and provided further, that nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their formulas, excepting so far as the provisions of this act may require to secure freedom from adulteration or misbranding."

body of the act expressly prohibiting the sale of deleterious food, qua deleterious, this title would furnish some reason for expanding in that direction any terms of prohibition there might be, ambiguous enough to permit the implication (Goodlett v. L. & N. R. R., 122 U. S., 391, 408); but we find in sec. 11, which relates solely to
1931 importations from foreign countries, an express direction that such importation shall be wholly forbidden if the food is adulterated or misbranded "or is otherwise dangerous to the health of the people of the United States." We have, therefore, a provision which responds to the call of the title in this particular and makes it unnecessary to resort to any otherwise unjustifiable construction for the mere purpose of giving some effect to all parts of the title. With the exception of this clause of sec. 11, every other directly or indirectly prohibitory clause of the act relates to articles which carry the taint of deception and fraud by being adulterated or misbranded. Section 2 prohibits interstate commerce in any article "which is adulterated or misbranded within the meaning of this act" and subsequent clauses of the same section refer to "any such article so adulterated or misbranded within the meaning of this act" and to "any such adulterated or misbranded foods." The expert examination provided for by sec. 4 is to determine "whether such articles are adulterated or misbranded." Section 7 defines when, for the purposes of the act, an article shall be deemed to be adulterated, and sec. 8 defines the term "misbranded" as used in the act, and specifies when, for the purposes of the act, an article shall be deemed to be misbranded. Section 9 prescribes a certain immunity from prosecution when there is a guaranty to the effect that the article is not adulterated or misbranded within the meaning of the act. Section 10 provides for the seizure and forfeiture of the offending articles, but its effect is limited to an article which is adulterated or misbranded within the meaning of the act. A subsequent clause of sec. 10 furnishes some superficial support for the broader theory of the purpose of the act by providing for the disposition of the offending article if it "is condemned as being adulterated or misbranded or of a poisonous or deleterious character within the meaning of this act"; but this support is only superficial, because the power to condemn, given by the first part of sec. 10, rests on the finding that the article is "adulterated or misbranded." This general reference to a poisonous or deleterious character as ground of condemnation must be to instances where that character, by incorporation into the article, causes the fatal adulteration or misbranding. Considering all these parts of the act, together with its title, we can not doubt that, so far as its general purpose and intent furnish any aid for interpretation, that general purpose and intent must be deemed to be the prevention of fraud and deception, so that the purchaser can get the thing he
1932 has a right to suppose he is getting, rather than the protection of the public health to the extent of preventing the purchaser from deliberately and intentionally buying a particular food which is what it purports to be, even though a jury might think it "deleteri-

ous." If argument were needed to sustain this conclusion, it could be found in the provisions as to drugs. Foods and drugs are put on the same basis throughout, save as to matters of definition, and some detailed requirements. There can be no room to suppose that the act was intended to prohibit broadly the sale of all deleterious foods and not to prohibit with equal breadth the sale of all poisonous drugs. The latter supposition is impossible; and so the former can not be accepted. Further support will be found in the provisions which, by necessary implication, permit the sale of foods containing cocaine, morphine, and the like, provided the purchaser is properly advised of the contents. These views of the general purpose of the act have been accepted by the decisions, so far as they go (Savage v. Jones, 225 U. S., 501, 533–5; McDermott v. Wisconsin, 228 U. S., 115, 131; United States v. Lexington Co., 232 U. S., 399, 409).

The general language of the court in the last-cited case that "the statute was intended to protect the public health from possible injury" is not at all inconsistent with the view we have expressed, because that language is used with reference to adulterations and the addition to known foods of injurious elements. The very word "adulterated" imports fraud and deception; it implies that the article is not what is purports to be.

Under the statement of facts, it is clear that the only question arising under sec. 7 is whether the caffeine in the Coca Cola is an "added poisonous or other added deleterious ingredient which may render such article injurious to health," and, under the assumption made by the district judge, of which the Government can not complain, and which we here adopt, but only for the purposes of this opinion—i. e., that there was evidence requiring submission to the jury to the effect that caffeine is a poisonous or deleterious ingredient which may render the Coca Cola injurious to health—it is equally clear that the turning point is whether it can be said or whether a jury could be permitted to say that the caffeine was "added" within the meaning of this clause.

It is impossible intelligently to conceive the meaning of "added," unless we suppose a base upon which the addition is placed, and we at once meet the question: If caffeine is the addition, what is
1933 the base? For fifteen years before the passage of the act Coca Cola had been an existing article of food (within the statutory definition of "food") and in the latter ten years of that period it had been one of the most widely known and used articles of its general class. It was a compound; it had no distinctive base (unless water, by reason of its larger proportion); it was made up of water, sugar, caffeine, phosphoric acid, glycerine, lime juice, coloring matter, flavoring matter, and "merchandise No. 5." Each of these elements is more or less important; there seems to be no method of determining their relative importance, but if any one may be rejected as comparatively negligible or secondary or noncharacteristic, that one is not caffeine. In the manufacturing process water and sugar are boiled to make a syrup; this boiling is repeated, then caffeine is "added,"

and then the syrup is boiled once or twice more; the syrup is then put into a cooling tank and then into a mixing tank, in which the remainder of the process is carried on and in which the other elements become part of the ultimate combination. It is plain as may be that without caffeine the mixture would not be Coca Cola, and the purchaser who had been using it in its standard form fifteen years when the act was passed and who might then buy an article of the same name which did not contain any caffeine would rightfully think that he was deceived, and yet it is said that the act intended to prevent misleading the public is violated unless the public is thus misled.

It is another form of the same thought to say that the mere use of the word "adulterate" or "added" implies the existence of a standard, and it is a contradiction in terms to say that the use of an element necessary to constitute the standard is an adulteration of or addition to the standard, but to this contradiction the argument for the Government necessarily leads. So, further, we find that clause 3 of that division of sec. 7 relating to foods declares adulteration if any valuable constituent has been abstracted. Caffeine is a valuable constituent. If it is omitted the article is adulterated, and if it is included the article is adulterated. We must break clause 3 to keep clause 5.

It is urged that in case of a compound article each element is, in a proper sense, "added," and so, if any element is deleterious, it is an "added deleterious ingredient." This position not only depends, in part, upon what we have thought an erroneous view of the general purpose of the statute, but it destroys all force in the word "added" and gives clause 5 of that part of sec. 7 relating to food pre-
1934 cisely the same meaning as if it read "if it contain any poisonous or other deleterious ingredient, etc." The deliberate and careful insertion of the word "added" before the word "poisonous" and again before the word "deleterious," while the word is omitted in the preceding almost identical clause relating to confectionery, can not be treated as accidental or meaningless. So to do would violate the settled rule of construction which requires us to "give full effect to all the words in their ordinary sense" (Bend v. Hoyt, 13 Pet., 263), and requires that "signification and effect shall, if possible, be carried to every word" (Washington Co. v. Hoffman, 101 U. S., 112, 115), and declares it the "duty of the court to give effect, if possible, to every clause and word of a statute, avoiding, if it may be, any construction which implies that the legislature was ignorant of the meaning of the language it employed" (Montclair v. Ramsdell, 107 U. S., 147, 152).

Again, it is urged that the true test whether the deleterious ingredient is "added" is whether this ingredient is in its natuaral or in an artificial form. This criterion is supposed to find support in statements made during the congressional rebates and in the well-known fact that many natural articles of food, like fruits, contain elements which in the combination formed by the complete fruit are not mate-

rially harmful, but which, when extracted and administered separately, may be injurious. This criterion may often be a useful aid in applying and interpreting the statute, but to apply it as a hard and fast rule where artificially compounded foods are under consideration comes to saying, in the case before us, that if coffee berries or tea leaves, or, we take it, the complete extract of coffee berries or tea leaves, containing the amount of caffeine now in question, were put into the compound in its manufacture, there would be no violation of the law, but that if the caffeine, and that only, which was in these same coffee berries or tea leaves or in some other natural product is put into the syrup the law is broken. Alcohol surely might be considered a "deleterious ingredient" if caffeine may be, but can we suppose that a compound food would be obnoxious to this law if it contained five per cent of alcohol purchased in the market ready distilled and yet that a compound otherwise the same would be within the approval of the law though it contained twenty-five per cent of alcohol distilled from grain during the process of making the compound? There has been much controversy whether "blended whiskey" could be sold under that name, but it has never been thought
1935 to be forbidden merely because its alcohol was an "added" ingredient. Many wines are "fortified" by adding alcohol, and these may be obnoxious to the law for other reasons; but if the theory now under consideration is correct, they could not be sold at all, no matter how labeled. This theory must even lead us to say that if a ground or pulverized coffee or a coffee extract is so deficient in caffeine as to be below standard, the law is violated by adding from another source caffeine enough to make the coffee of full normal strength, or to say that it is a vital distinction whether the citric acid contained in any familiar and popular acid beverage is at the time of compounding squeezed from a lemon or poured from a bottle. We can not follow the argument which brings us to those results. Not only is it without basis in the statute, but it lacks inherent cogency.

We get from sec. 8 some help on the proper meaning of the phrase "added poisonous or deleterious ingredient," because, unquestionably, the two sections must be construed together and the same phrase should have the same construction in each. The proviso of the fourth paragraph of that part of sec. 8 relating to food seems to be drawn with express reference to situations like the present. Congress must have known that many proprietary articles of food and drugs were upon the market under proprietary or trade names, and Congress thought fit to provide that these things should not be deemed to be adulterated unless any deleterious ingredient contained therein was "added." This recognizes somewhat more expressly than is done by sec. 7 the thought that the necessity of a standard before there can be any adulteration applies as well to compounds as to simple foods, and then avoids future difficulties in application by providing that the compound article, in its distinctive and known form, should be the standard.

We do not overlook the argument that the act makes no distinction between compounds known at its date and those thereafter devised, and so that the construction which prevents an inherent element from being considered as "added" leaves the manufacturer at liberty to use any poison he pleases in making up his compound "food," provided only he gives to it and sells it under a distinctive name. This conclusion must, to some extent, be granted; yet it loses most of its apparent force when we remember the real purpose of the act and observe the express direction of the law that the maker of a proprietary food need not disclose its contents if he states the place of manufacture. It would seem a proper provision that if a proprietary food contains any ingredient fairly subject to be called deleterious, the maker should disclose on the label its presence and its extent, just as is required in numerous specific instances; but we can not make such a law. On the other hand, it is difficult to suppose that Congress intended absolutely to forbid the use in any compound of any element that a jury might later call "deleterious;" but it must be one thing or the other. The prohibition is either absolute or nonexistent. The best-known habit-forming drugs are selected, and implied permission is given to allow their use in compounding products for sale, provided they are named on the label; but as to the great mass of other food and drug elements which are undoubtedly deleterious if used to excess, there is no provision for naming them on the label. If they are within the definition of "added deleterious ingredient," they may never be used under any conditions or in any quantity that may be injurious to health, even though they are described in the largest of letters on the outside of the package. This way of reading the statute would practically greatly impede the progress of synthetic chemistry in foods, and we think it distinctly more unreasonable than it is to suppose that Congress, having selected and regulated the use of those things known to be particularly dangerous, thought best not wholly to forbid at that time other things from which no serious danger need be anticipated.

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There is a middle view which is sufficient for the purposes of this case and which will recognize the composite meaning of "added deleterious," rather than the separate meaning of each word. This view is that in using the word "added" with reference to a possibly deleterious food ingredient, Congress had in mind an addition above and beyond the quantity in which such ingredient was normally found in usual and customary articles of food, and that no such ingredient should be considered as "added" if it was present only in the quantity in which it existed in these common articles of food with which every Member of Congress was familiar and which had generally been thought wholesome. For example: creosote and other products of destructive wood distillation are, independently considered, injurious, but they have always been present in smoked hams. Can the addition of the same preservatives to the same extent to the same meat be something that Congress intended to prohibit? The

boric acid, found in apples, is a preservative. If certain apples which are to be preserved are not up to the maximum in this element, did Congress intend to forbid supplying the deficiency by the same element from another source? Acetic acid may, of course, be injurious, but if, by its use, an artificial vinegar is made which is chemically and in every way equivalent to the natural vinegar familiar to the members of Congress in many compounds, would they have thought of it as a deleterious addition? No example is so clear as the very one here involved. Every Member of Congress had been familiar from childhood with tea and coffee; perhaps most of them drank it. The average cup of coffee contains more than two grains of caffeine; the average cup of tea, one and one-half grains. A glass of Coca Cola, as consumed, contains one and one-fifth grains of caffeine. The chemical qualities and the physiological effects of the caffeine which is in the tea or coffee and of the caffeine which is in the Coca Cola are precisely the same. We are quite convinced that the use in an artificial beverage of a certain element which had been one of its characteristic elements for many years, and when such use was in a less proportion than the same element was known to make up in different natural beverages then in universal use and generally thought wholesome—that such an element so employed could not have been within the meaning of Congress when it chose the words "added deleterious ingredient."

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The question arising under sec. 8—the misbranding section—is to be determined by the proviso under the fourth clause relating to food. Separate reference to the first clause which forbids sale "under the distinctive name of another article" is unnecessary, because the same prohibition is repeated in the proviso under clause four. We have reached the conclusion that Coca Cola does not contain any "added poisonous or deleterious ingredients," and it is undisputed that the labels carry a statement of the place of manufacture. Hence, this proviso declares that Coca Cola shall not be deemed to be adulterated or misbranded if it was or is known as an article of food under its own distinctive name and if it is not in imitation of or offered for sale under the distinctive name of another article. It is an article of food under the definition of the statute. That it was, at the time of the passage of the law and ever since has been, known under its own distinctive name is too clear for question, except as it is said that the adopted name can not be its distinctive name because it is the distincive name of another article. Neither is it said to be an imitation of another article, except as these words also raise the same question whether it is sold under the distinctive name of another article. Coming to that question, and just as on the subject of adulteration we must first find the standard, we here first meet the inquiry: What is the "distinctive name of another article" under which name Coca Cola is sold? The record makes it very clear to us that there is no such other article. No article, except plaintiff's compound, is or ever has been sold "under the distinctive name," Coca Cola. These words constitute and are the distinctive

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name of plaintiff's product, and they are the distinctive name of nothing else. "Coca" is indicative of one article; "cola" is indicative of another, very distinct, but "Coca Cola" was not in 1892 and (save for the general knowledge of plaintiff's article) is not now intelligently descriptive of any combination of the two. It might be medicine, food, or drink; it might be to swallow, smoke, or chew. These associated words as the distinctive name of any substance or combination of substances were unknown until adopted by plaintiff; that "distinctive name" is still unknown as an appellation for any other substance on the market.

The burden put upon the Government to show that Coca Cola is masquerading under the distinctive name of another article is surely more exacting than the burden on one attacking the trade-mark to show that the name is sufficiently misleading as indicating the make-up of the product so that it is an improper trade-mark. We consider the latter question in our opinion this day filed in Nashville Syrup Co. v. Coca Cola Co., and conclude that the name carried no forbidden deception. We need not here repeat that discussion. If that conclusion is correct, it is even more certain that Coca Cola is not guilty of posing "under the distinctive name of another article."

It follows that the judgment below must be affirmed.

1939 PETITION FOR WRIT OF ERROR.

(Filed May 27th, 1915.)

United States Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA, PLAINTIFF IN ERROR, *vs.* FORTY BARRELS AND TWENTY KEGS OF COCA COLA, THE COCA Cola Company of Atlanta, Georgia, claimant, defendant in error.	#2415.

Your petitioner, the United States of America, plaintiff in error in the above-entitled cause, respectfully shows that the above-entitled cause is now pending in the United States Circuit Court of Appeals for the Sixth Circuit, and that a judgment has therein been rendered on the 13th day of June, 1914, affirming a judgment of the District Court of the United States for the Southern Division of the Eastern District of Tennessee, in favor of the Coca Cola Company, of Atlanta, Georgia, claimant and intervenor, and that the matter in controversy in said suit exceeds one thousand dollars ($1.000.00), besides costs, and that the jurisdiction of none of the courts above mentioned is or was dependent in anywise upon the opposite parties to
1940 the suit or controversy, being aliens and citizens of the United States or citizens of the different States, and that this cause does not arise under the patent laws nor the revenue laws nor the

criminal laws, and that it is not an admiralty case, and that it is a proper case to be reviewed by the Supreme Court of the United States upon writ of error, and therefore your petitioner would respectfully pray that a writ of error be allowed it in the above-entitled cause directing the clerk of the United States Circuit Court of Appeals for the Sixth Circuit to send the record and proceedings in said cause, with all things concerning the same, to the Supreme Court of the United States in order that the errors complained of in the assignment of errors herewith filed by said plaintiff in error may be allowed, and if error be found corrected according to the laws and customs of the United States.

THE UNITED STATES OF AMERICA,
By LEWIS M. COLEMAN,
United States Attorney for the Eastern District of Tennessee.

The foregoing petition is granted and writ of error allowed as prayed for, without bond.

J. W. WARRINGTON,
Judge of the United States Circuit Court of Appeals for the Sixth Circuit.

MAY 27th, 1915.

1941 ASSIGNMENT OF ERRORS.

(Filed May 27th, 1915.)

United States Circuit Court of Appeals for the Sixth Circuit.

THE UNITED STATES, PLAINTIFF IN ERROR,
vs.
FORTY BARRELS AND TWENTY KEGS OF COCA COLA
(The Coca Cola Company, Claimant, Defendant in Error).

And now comes the plaintiff in error, The United States of America, by its attorney, and says that in the record and proceedings aforesaid of said United States Circuit Court of Appeals for the Sixth Circuit in the above-entitled cause and in the rendition of the final judgment therein manifest error has intervened, to the prejudice of said plaintiff in error, in this, to wit:

First. The said Circuit Court of Appeals erred in entering judgment affirming the action of the District Court of the United States in peremptorily instructing the jury that the seized product was neither adulterated nor misbranded within the meaning of the food & drugs act.

Second. The said Circuit Court of Appeals erred in not re-
1942 versing the said judgment of the United States District Court aforesaid and in not remanding said cause to said District Court for a new trial.

Third. The said Circuit Court of Appeals erred in holding that the product seized was not adulterated, as in the libel averred.

Fourth. The said Circuit Court of Appeals erred in holding and finding that under the evidence in this case "Caffeine," even if it were poisonous or deleterious, was not an "added" ingredient of the food product Coca Cola—and for that reason the product seized was not adulterated within the meaning of the food & drugs act.

Fifth. The said Circuit Court of Appeals erred in its holding, in substance, that the food & drugs act does not prohibit the sale and shipment, in interstate commerce, of a food product, however poisonous or deleterious it may be, if the poisonous or deleterious ingredients are a part of the original formula, as devised by the proprietor.

Sixth. The said Circuit Court of Appeals erred in its conclusion and finding that the general purpose and intent of the food & drugs act, in so far as it relates to interstate sales and transpor-
1943 tation of food products, was the prevention of fraud upon and deception of the purchaser, and not the protection of the public health by prevention of the sale and transportation of poisonous and deleterious foods in interstate commerce, as stated in the caption of the act.

Seventh. The said Circuit Court of Appeals erred in its finding and conclusions that the name "Coca Cola" did not constitute a false and misleading representation of the presence in the product seized of the substances "coca" and "cola" and that said product was not therefore misbranded within the meaning of the food & drugs act.

Eighth. The said Circuit Court of Appeals erred in its finding and conclusions that the product seized was not offered for sale under the distinctive name of the substances "coca" and "cola" and therefore was not misbranded within the meaning of the food & drugs act.

Ninth. The said Circuit Court of Appeals erred in that it construed the food & drugs act as leaving the manufacturer at liberty to use any poison he pleased in making up a compound food for
1944 sale and shipment in interstate commerce, provided only he gives to the compound a distinctive name and sells it under such name.

Tenth. The said Circuit Court of Appeals erred in not finding and holding that the name Coca Cola was false and misleading, because said product contained no coca and but little, if any, cola, while the name Coca Cola indicates the presence, in substantial amounts, of both coca and cola, articles known in commerce and trade, and was therefore misbranded under the terms of the food & drugs act.

Eleventh. There was evidence tending to show that the seized product was both adulterated and misbranded under the terms of said act. Proper issues in this behalf were tendered by the Government and they should have been submitted to a jury. Therefore it was error to affirm the direction of a verdict by the District Court.

Wherefore the said United States of America, plaintiff in error, prays that for the errors aforesaid and other errors appearing in the record of said United States Circuit Court of Appeals for the Sixth

Circuit, in the above-entitled cause, to the prejudice of the plaintiff in error, the said judgment of the said United States Circuit
1945 Court of Appeals for the Sixth Circuit be reversed, annulled, and for naught esteemed, and that said cause be remanded to the United States District Court for the Southern Division of the Eastern District of Tennessee, with instructions to grant a new trial in said cause, or for such further proceedings in said cause as may be determined upon by this honorable court, to the end that justice may be done in the premises.

LEWIS M. COLEMAN,
Attorney for Plaintiff in Error.

1946 UNITED STATES OF AMERICA, *ss:*

The President of the United States to the honorable the judges of the United States Circuit Court of Appeals for the Sixth Circuit, greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the Circuit Court of Appeals before you, or some of you, between the United States of America, plaintiff in error, and Forty Barrels and Twenty Kegs of Coca Cola, the Coca Cola Company, of Atlanta, Georgia, claimant and intervenor, defendant in error, a manifest error has happened to the great damage of the said plaintiff in error, as by its complaint appears; we being willing that error, if any hath been, should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same in the said Supreme Court, at Washington, within thirty days from the date hereof, that the record and proceedings aforesaid being inspected the said Supreme Court may cause further to be done therein to correct that error what of right and according to the laws and customs of the United States should be done.

Witness the Honorable Edward D. White, Chief Justice of
1947 the United States, the 27th day of May, in the year of our Lord, one thousand nine hundred and fifteen.

[SEAL.] FRANK O. LOVELAND,
Clerk of the United States Circuit Court of Appeals for the Sixth Circuit.

By ARTHUR B. MUSSMAN,
Deputy, Acting Pursuant to Sec. 125, Judicial Code, After the Death of the Clerk.

Allowed by Hon. John W. Warrington, judge of the United States Circuit Court of Appeals for the Sixth Circuit.

J. W. WARRINGTON,
Judge of the United States Circuit Court of Appeals for the Sixth Circuit.

May 27th, 1915.

United States Circuit Court of Appeals for the Sixth Circuit.

In pursuance of the command of the within writ of error I, Frank O. Loveland, clerk of the United States Circuit Court of Appeals for the Sixth Circuit, do herewith transmit under the seal of said court a true copy of the record and of the assignment of errors, and of all proceedings in the cause and matter in said writ of error stated.

Witness my official signature and the seal of said court, at Cincinnati, Ohio, in said circuit, this 27th day of May, A. D. 1915, and in the 139th year of the independence of the United States of America.

[SEAL.] FRANK O. LOVELAND,
Clerk United States Circuit Court of Appeals,
for the Sixth Circuit.
By ARTHUR B. MUSSMAN,
Deputy, Acting Pursuant to Section 125, Judicial Code,
After the Death of the Clerk.

1948 (Stamped:) Filed May 27, 1915. Frank O. Loveland, clerk.

1949 United States Circuit Court of Appeals for the Sixth Circuit.

I, Frank O. Loveland, clerk of the United States Circuit Court of Appeals for the Sixth Circuit, do hereby certify that the foregoing is a true and correct copy of the record and of the assignment of errors and of all proceedings concerning the same, together with the original writ of error, in the case of United States of America vs. The Coca Cola Company, No. 2415, as the same remains upon the files and records of said United States Circuit Court of Appeals for the Sixth Circuit, and of the whole thereof.

In testimony whereof I have hereunto subscribed my name and affixed the seal of said court at the city of Cincinnati, Ohio, this 27th day of May, A. D. 1915.

[SEAL.] FRANK O. LOVELAND,
Clerk of the United States Circuit Court of Appeals
for the Sixth Circuit.
By ARTHUR B. MUSSMAN,
Deputy, Acting Pursuant to Sec. 125, Judicial Code,
After the Death of the Clerk.

1950 UNITED STATES OF AMERICA, *ss:*

The President of the United States to the Coca Cola Company, claimant and intervenor of Forty Barrels and Twenty Kegs of Coca Cola, greeting:

You are hereby cited and admonished to be and appear before the Supreme Court of the United States, to be holden at Washington, within thirty days from the date hereof, pursuant to a writ of error filed in the clerk's office of the United States Circuit Court of Appeals for the Sixth Circuit, wherein the United States of America is plain-

tiff in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error, as in the said writ of error mentioned, should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the honorable John W. Warrington, judge of the United States Circuit Court of Appeals for the Sixth Circuit, this 27th day of May, in the year of our Lord one thousand nine hundred and fifteen.

J. W. WARRINGTON.

Copy of writ served on us this 28th day of May, 1915.

SIZER, CHAMBERT & CHAMBERT,
Attorney for the Coca Cola Company, of Atlanta, Georgia, Intervenor and Claimant of Forty Barrels and Twenty Kegs of Coca Cola.

1951 In the Supreme Court of the United States, October Term, 1914.

UNITED STATES *v.* FORTY BARRELS AND TWENTY KEGS OF COCA COLA.	Writ of Error to the Circuit Court of Appeals for the Sixth Circuit.

UNITED STATES OF AMERICA, *District of Columbia, ss:*

Before me, a notary public, personally appeared the undersigned, Andrew J. McIntyre, in the District aforesaid, who, being duly sworn, deposes and says:

I am an inspector of the Bureau of Chemistry of the United States Department of Agriculture and am acquainted with the value of the Coca Cola which is the matter in controversy in this case. Its total value at the time of seizure was approximately twenty-five hundred dollars ($2,500.00).

From examinations made of samples of this syrup I am of the opinion that its value on June 13, 1914, exceeded one thousand dollars ($1,000.00) and was about two thousand dollars ($2,000.00). I am further of the opinion that its value at the present time is approximately the same, to wit: about two thousand dollars ($2,000.00).

ANDREW J. MCINTYRE.

Subscribed and sworn to before me at Washington, D. C., this twenty-ninth day of May, 1915.

[SEAL.]

J. S. G. GALLAGHER,
Notary Public.

My commission expires April 6, 1918.

(Indorsement on cover:) File No. 24845. U. S. Circuit Court Appeals, 6th Circuit. Term No. 562. The United States, plaintiff in error, vs. Forty Barrels and Twenty Kegs of Coca Cola, The Coca Cola Company of Atlanta, Georgia, claimant and intervenor. Filed July 15th, 1915. File No. 24845.

In the Supreme Court of the United States.

OCTOBER TERM, 1915.

THE UNITED STATES, PLAINTIFF IN ERROR,
v.
FORTY BARRELS AND TWENTY KEGS OF COCA-COLA. } No. 562.

IN ERROR TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

MOTION BY THE UNITED STATES TO ADVANCE.

Comes now the Solicitor General and respectfully moves the court to advance the above-entitled cause for hearing on a day convenient to the court.

The United States filed an original and an amended libel in the District Court of the United States for the Eastern District of Tennessee under the Food and Drugs Act of June 30, 1906, 34 Stat. 768, to condemn a quantity of "Coca-Cola" on the grounds that it was adulterated and misbranded. The Coca-Cola Company intervened and filed a claim to the libeled property. The trial judge directed a verdict for the claimant and entered judgment dismissing the libels (191 Fed. 431, 440), which judgment was affirmed by the Circuit Court of Appeals for

the Sixth Circuit (215 Fed. 535, 544). From the latter judgment the United States have sued out a writ of error from this court.

QUESTIONS PRESENTED.

1. Is a compound food with a distinctive name adulterated under the act, if one of its ingredients is a poisonous or deleterious substance which may render such article injurious to health and which, though required by the formula of that particular compound, is foreign to and not normally found in foods of like character?

2. Is a compound food misbranded under the act if its name, though not for many years used as the distinctive name of any other food, is composed of the names of two articles which are present in unsubstantial amounts, if at all?

These questions are of importance not only to the general public, but also to the Department of Agriculture and the Department of Justice in prosecuting future violations of the Food and Drugs Act, and for that reason an early determination of the same by this court is desirable.

Opposing counsel concur.

JOHN W. DAVIS,
Solicitor General.

DECEMBER, 1915.

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In the Supreme Court of the United States.

OCTOBER TERM, 1915.

THE UNITED STATES, PLAINTIFF IN ERROR,
v.
FORTY BARRELS AND TWENTY KEGS OF COCA COLA, THE COCA COLA COMPANY, OF ATLANTA, GEORGIA, CLAIMANT. } No. 562.

IN ERROR TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT.

BRIEF FOR THE UNITED STATES.

STATEMENT OF CASE.

This is a libel brought in the District Court of the United States for the Eastern District of Tennessee under the Food and Drugs Act of June 30, 1906, c. 3915 (34 Stat. 768), to condemn a quantity of Coca Cola, shipped from Atlanta, Ga., to Chattanooga, Tenn., on the grounds that it was adulterated and misbranded. The Coca Cola Company intervened and filed a claim to the property. The trial judge directed a verdict for the claimant (R. 1903, 191 Fed. 431), and the judgment on the verdict was affirmed by the Circuit Court of Appeals (R. 1926, 215 Fed. 535). The case is here upon writ of error.

STATEMENT OF FACTS.

Coca Cola, an article of food within the meaning of the Food and Drugs Act, is a soda-fountain sirup or base for soft drinks (R. 713), one ingredient of which is caffeine. This ingredient, in the form of pure caffeine, is added to the sirup during the process of manufacture (R. 732, 744). There was evidence to the effect that the caffeine is injurious to the health of children and nervous persons, many of whom drink Coca Cola (R. 266, 382), and also to the effect that it may render the drink injurious to the health of all consumers (R. 372, 459, 507, 508, 528, 529).

The District Court assumed, as did also the Circuit Court of Appeals for the purposes of its opinion, "that there was evidence requiring submission to the jury to the effect that caffeine is a poisonous or deleterious ingredient which may render the Coca Cola injurious to health" (215 Fed. 535, 540); and each court based its decision, on the count for adulteration, wholly upon the ground that the caffeine was not an "added" ingredient (191 Fed. 431, 433; 215 Fed. 535, 540).

The name of the drink was originally "Coca-Cola Syrup and Extract," shortened to "Coca Cola" (R. 714), and under the latter name it has been sold for over 20 years. Coca and cola are articles known to the market under these distinctive names (R. 175, 176, 202, 203, 264, 778, 789, 1815). These articles are present, according to claimant's evidence, in the proportion of one part in about 5,300 parts of the sirup (R. 1773–1776, 1806), or in 37,000 parts of the drink

(R. 752, 753). The evidence showed that any coca used lacks the odor, flavor, and characteristic properties of coca (R. 178, 803, 1778, 1785, 1794), and tended to prove that there is not enough coca or cola present to affect at all the odor or flavor of the drink (R. 1719, 1776). There was, also, evidence to the effect that the Coca Cola seized contained no coca and little, if any, cola (R. 164, 637), and the trial court assumed for the purposes of its decision "that there may be a conflict in the evidence as to whether or not there is contained in 'Coca Cola' any portion of the leaves of the coca plant or any substance or quality derived therefrom to any material degree" (191 Fed. 431, 438–439). The court held it was not necessary to submit this issue to the jury, since, in its opinion, independently of this question of fact, verdict should be directed for claimant on the count for misbranding, because, as stated by the Circuit Court of Appeals in affirming this judgment, the name Coca Cola "is not now intelligently descriptive of any combination of the two"; that is, of coca and cola. (215 Fed. 535, 544.)

SPECIFICATION OF ERRORS.

The assignments of error appear on pages 1935 to 1937 of the record. In substance, they charge: That the Court of Appeals erred in affirming the direction of verdict in favor of defendant; in holding, as a matter of law, that the caffeine in Coca Cola is not, within the meaning of the Food and Drugs Act, an added ingredient; in so construing the act as to permit the manufacturer to use any poison whatsoever

in a compound food, provided only it is given a distinctive name and the poison is an ingredient of the original formula; and in holding that the product offered for sale under the name Coca Cola was not misbranded, though containing no coca and but little, if any, cola.

QUESTIONS PRESENTED.

The questions presented, therefore, are:

I. Is a compound food with a distinctive name adulterated under the act, if it contain any poisonous or other deleterious ingredients which may render such article injurious to health, other than a food product which, in the combination found in nature, contains a poison?

II. Is a compound food misbranded under the act if its name, though not used as the distinctive name of any other article, is composed of the names of two separate articles which are present in the food in unsubstantial amounts, if at all?

ARGUMENT.

Section 2 of the Food and Drugs Act prohibits the shipment in interstate commerce of any article of food or drugs which is adulterated or misbranded within the meaning of the act.

The libel contains one count alleging that the Coca Cola seized was adulterated, and another that it was misbranded within the meaning of the statute. (R. pp. 25–28.)

The subject is presented in its two phases under the subheads, adulteration and misbranding.

I.

ADULTERATION.

The count for adulteration raises the issue as to whether the caffeine in Coca Cola is an added ingredient within the meaning of section 7 of the act, which provides:

> SEC. 7. That for the purposes of this act an article shall be deemed to be adulterated: * * *
>
> In the case of food: * * *
>
> First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.
>
> Second. If any substance has been substituted wholly or in part for the article.
>
> Third. If any valuable constituent of the article has been wholly or in part abstracted.
>
> Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.
>
> Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this act shall be construed as applying only when said products are ready for consumption.

The courts below, assuming for the purposes of their judgments that the contested question as to whether the caffeine in Coca Cola was poisonous or deleterious was for the jury, held, as a matter of law, that the caffeine was not an "added" ingredient, and therefore its presence would not render Coca Cola "adulterated," whether the caffeine was poisonous or not. The basis of this decision was the assumption that none of the ingredients required by the formula of a compound food is an "added" ingredient, provided only the food has a distinctive name.

The startling result of such an interpretation of the clause is thus expressed by the Circuit Court of Appeals:

> We do not overlook the argument that the act makes no distinction between compounds known at its date and those thereafter devised, and so that the construction which prevents an inherent element from being considered as "added" leaves the manufacturer at liberty to use any poison he pleases in making up his compound "food," provided only he gives to it and sells it under a distinctive name. (215 Fed. 535, 542.)

PURPOSE OF THE ACT.

This construction renders the act wholly inadequate to accomplish the purposes for which it was passed. Indeed, the vice of the holding is due to a misconception of its purposes, which the court said was "vital to have in mind." It held that the—

> *general purpose and intent* must be deemed to be the *prevention of fraud and deception*, so

> that the purchaser can get the thing he has a right to suppose he is getting, *rather than the protection of the public health* to the extent of preventing the purchaser from deliberately and intentionally buying a particular food which is what it purports to be, even though a jury might think it "deleterious." [Italics ours.] (215 Fed. 539.)

This construction reflects only one of the purposes of the act, the prevention of fraud, and ignores the other and primary purpose of protecting the public health.

This court, in *United States* v. *Morgan* (222 U. S. 274, 281), referred to the act as "a law passed in the interest of the public health;" and in the Bleached Flour Case said:

> The statute upon its face shows that the *primary purpose* of Congress was to prevent injury to the public health by the sale and transportation in interstate commerce of misbranded and adulterated foods. * * * *As against adulteration, the statute was intended to protect the public health from possible injury by adding to articles of food consumption poisonous and deleterious substances which might render such articles injurious to the health of consumers.* [Italics ours.] (*United States* v. *Lexington Mill & Elevator Co.*, 232 U. S. 399, 409; See also *United States* v. *Antikamnia Company*, 231 U. S. 654, 665.)

The lower Federal courts are practically unanimous in holding with the Circuit Court of Appeals for the Eighth Circuit that—

> the sole purpose of its enactment was (1) to protect purchasers from injurious deceits by

> the sale of inferior for superior articles; and (2) to protect the health of the people by preventing the sale of normally wholesome articles to which have been added substances poisonous or detrimental to health. (*Hall-Baker Grain Co.* v. *United States*, 198 Fed. 614, 616; see also *French Silver Dragée Co.* v. *United States*, 179 Fed. 824, 826; *United States* v. *Johnson*, 177 Fed. 313, 315; *United States* v. *Five Boxes of Asafœtida*, 181 Fed. 561, 565; *United States* v. *Morgan*, 181 Fed. 587, 588; *United States* v. *1950 Boxes of Macaroni*, 181 Fed. 427; *Galt & Co.* v. *United States*, 39 App. D. C. 470, 475.)

The title and various provisions of the act clearly show that it is, as this court has announced it to be, a measure for the protection of the public health.

The title is as follows: "An act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes." (34 Stat. 768.)

> In each of these cases the letter of the act was construed in the light of its spirit and purpose, as indicated by its title no less than by the enacting clauses. The same guiding principle should be adhered to in considering the question now presented. (*Southern Ry. Co.* v. *Crockett*, 234 U. S. 725, 735.)

The principal portions of the act indicating its purposes are: The provision relating to confectionery; the fifth and sixth paragraphs, referring to food, of

section 7; and the following expressions [italics ours] in sections 8, 10, and 11:

> *And provided further*, That nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods *which contain no unwholesome added ingredient* to disclose their trade formulas, etc. (Sec. 8, paragraph second.)
>
> Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: Provided, That an article of food which does not contain any *added poisonous or deleterious ingredients* shall not be deemed to be adulterated or misbranded in the following cases: (Section 8, paragraph fourth.)
>
> And if such article is condemned as being adulterated or misbranded, *or of a poisonous or deleterious character*, within the meaning of this act, the same shall be disposed of by destruction or sale, etc. (Section 10.)
>
> If it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this act, or is otherwise dangerous to the health of the people, etc. (Section 11.)

The legislative history also clearly shows that this was primarily a health measure. Senator Heyburn, author of the bill and chairman of the committee which reported it, said:

> It has seemed to the committee in presenting this bill that the *first consideration* was to

> prevent the manufacture of articles that were *deleterious to health* and to prevent the combination of articles that would deceive and defraud the public. [Italics ours.] (40th Cong. Rec., pt. 1, p. 894.)

The report of the committee of the House of Representatives which redrafted the bill recites:

> The bill is what it purports to be, a measure in the interest of honest dealing and wholesome foods. * * * The laboring man or artisan, who knows his own trade, but who may not be an expert in the quality of foods or their imitations or adulterations, is entitled to the protection of the State to the extent that when he purchases an article for the consumption of his family he receives what he pays for, and, further, *to know that the food which he buys and eats shall give him strength and vigor instead of containing some harmful substance or poison which in the end breaks down his health.* [Italics ours.] (H. R. Rept. 2118, 59th Cong., 1st sess. p., 9.)

It is clear, therefore, that the primary purpose of this act was the protection of the public health, and it should be, as it and other remedial statutes have been, construed liberally to accomplish its purpose. (*United States* v. *Antikamnia Chemical Co.*, 231 U. S. 654, 665; *Hipolite Egg Co.* v. *United States*, 220 U. S. 45; *McDermott* v. *Wisconsin*, 228 U. S. 115; *Interstate Commerce Commission* v. *Goodrich Transit Co.*, 224 U. S. 194, 213; *United States* v. *Baltimore & Ohio R. R. Co.*, 225 U. S. 306, 324; *New York, New Haven & Hartford R. R. Co.* v. *Interstate Commerce*

Commission, 200 U. S. 361, 391; *Johnson* v. *Southern Pacific Co.*, 196 U. S. 1; *Southern Railway Co.* v. *Crockett*, 234 U. S. 725, 735.)

CONSTRUCTION OF ACT BY CIRCUIT COURT OF APPEALS.

The narrow interpretation placed upon the act by the Circuit Court of Appeals would render nugatory all provisions relating to adulteration, whether applied to simple or proprietary foods, since by the mere device of adding any ingredient whatsoever to an adulterated simple food and proclaiming a formula and distinctive name therefor the manufacturer could evade the restrictions of the act.

This court assumed in the case of *United States* v. *Lexington Mill & Elevator Co.* (232 U. S. 399) that it was unlawful to transport in interstate commerce flour which contained nitrites enough to make it injurious to health. Under the construction given the act by the Circuit Court of Appeals such flour, though shown to be poisonous to consumers, might freely move in interstate commerce provided its manufacturers gave it the distinctive name "Lexingtonia." Similarly, the macaroni which was condemned in the case of *United States* v. *1,950 Boxes of Macaroni* (181 Fed. 427), because colored with martius yellow, would have, under this construction, escaped condemnation if only a distinctive name had been given to the article and the martius yellow included in its formula.

It is inconceivable that this could have been the purpose of Congress in framing this great remedial

statute; that its authors were fascinated by mere names and satisfied with shadows instead of substance.

> And it needs no argument to demonstrate that the application of the principle of public policy which the statute embodies is to be determined by the substance of things and not by names, for if that were not the case the provisions of the statute would be wholly inefficacious, as names would readily be devised to accomplish such purpose. (*United States* v. *Louisville & Nashville R. R. Co.*, 235 U. S. 314, 326.)

There is nothing in the meaning of the word "added" to demand such a construction, and to so interpret the act will destroy its efficacy.

> Our duty, however, is not to destroy the law but to enforce it, and in doing so to seek to discover the intention of the lawmaker, the wrong intended to be prevented and the remedy designed to be afforded by the enactment of the statute. (*United States* v. *B. & O. R. R. Co.*, 225 U. S. 306, 324.)

The Circuit Court of Appeals felt impelled to its conclusion by its conception of the purposes of the act, which we have shown to be erroneous, and by the supposed necessity of its interpretation in order to give some meaning to the words "added ingredients."

It is submitted that the strained and highly technical construction it gave to these words was not only unnecessary but subversive of the purposes of the law. The meaning of "added" is variable.

A substance foreign to an article may be added to the substance or an ingredient of the substance may be added to its other ingredients. The meaning, therefore, of this rather colorless word, must be ascertained from its associated words and from the intention of Congress. It will be observed from a consideration of the provisions of section 7 of the act that Congress distinguished between the words "substance," in the first and second subheads, and the words "constituent" and "ingredient," in the third and fifth subheads. The Standard Dictionary defines "ingredient" as follows:

> That which is placed in or specifically enters into the constitution of any mixture or compound, or is a component part of any conglomerate; component; part; as, the ingredients of gunpowder are niter, charcoal, and sulphur.

The provision under consideration is as follows:

> SEC. 7. That for the purposes of this act an article shall be deemed to be adulterated:
> * * *
>
> Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health.

By associating the word "added" with the word "ingredient," we must conclude that Congress intended to forbid the addition of a poison whether that poison was called for by the formula of a proprietary food or was a substance foreign to it.

Such intention seems to be clearly indicated by the following excerpt from the last paragraph of section 8:

> *And provided further,* That nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding.

GOVERNMENT'S CONSTRUCTION OF ACT.

The Government submits the following paraphrase of the provision in question, as giving full significance to the words "added ingredient."

> If it contain any poisonous or other deleterious ingredient which may render such article injurious to health, other than a food product which, in the combination found in nature, contains a poison.

Such interpretation permits the addition of a poison in the form and combination found in a natural food product, but not as an extracted element added by man. It gives a real meaning to the word "added," entirely consonant with the intention of Congress, as indicated by the following excerpts from the Congressional Record, and, at the same time, does not render nugatory those provisions of the Act passed for the protection of the public health.

> One of the principal objects of the bill is to prohibit in the manufacture of foods intended for interstate commerce the addition of foreign substances, poisonous or deleterious to

health. The bill does not relate to any natural constituents of food products which are placed in the foods by nature itself. It is well known that in many kinds of foods in their natural state some quantity of poisonous or deleterious ingredients exists. How far these substances may be deleterious to health when the food articles containing them are consumed may be a subject of dispute between the scientists, but the bill reported does not in any way consider that question. If, however, poisonous or deleterious substances are added by man to the food product, then the bill declares the article to be adulterated and forbids interstate traffic. (H. R. Rept., 2118, 59th Cong., 1st sess., pp. 6 and 7.)

The word "added," after very mature consideration by your committee, was adopted because of the fact that there is to be found in nature's products, as she produces them, poisonous substances, to be determined by analysis. Nature has so combined them that they are not a danger or an evil—that is, so long as they are left in the chemical connection in which nature has organized them; but when they are extracted by the artificial processes of chemistry they become a poison. You can extract a poison from grain or its products, and when it is extracted it is a deadly poison; but if you leave that poison as nature embodied it in the original substance it is not a dangerous poison or an active agency of poison at all.

So, in order to avoid the threat that those who produce a perfectly legitimate article from

a natural product might be held liable because the product contained nature's poison it was thought sufficient to provide against the adding of any new substance that was in itself a poison, and thus emphasizing the evils of existing conditions in nature's product. That is the reason the word "added" is in the bill. Fusel oil is a poison. If you extract it, it becomes a single active agency of destruction, but allow it to remain in the combination where nature has placed it, and, while it is nominally a poison, it is a harmless one, or comparatively so. (Senator Heyburn, 40th Cong., Rec., pt. 3, p. 2647.)

Now, this is not a prohibitive section of this statute. It is merely a definition. It says that the mingling of an added poison with the thing itself would constitute an adulteration of it. Well, it probably would, in any event, and the courts probably would hold that to take an article that was, as whisky is when it is distilled, in its natural condition as it comes from the still, and mix anything with it that was of a character that would degrade it or would lessen its value, that would be to adulterate it. But this bill, in order to make that certain in describing what shall constitute the adulteration of these articles, whether it be foods, drugs, or liquors, says that in the case of liquors the article shall be deemed adulterated if it contain any added ingredient of poison. In other words, if you add to the venom of the article itself for destructive purposes, or the capacity of it to injure those who use it. That is the object of introducing the

word "added," because there are many legitimate substances in commerce that contain in their natural condition certain percentages of deleterious substances, poisonous in whole or in part, and this is intended simply to provide that if you add to those substances, no matter what the degree of deleteriousness may be, you have degraded the article to the extent that you have added other poisonous substances to it. That is what it means. It is merely a definition. Other portions of the bill dealing with the subject, so far as prohibition in commerce of these articles is concerned or punishment for engaging in it; but to strike out the word "added" here would be an admission that if a thing contains 5 per cent poison, it would be no offense to add another 5 per cent to it and make it that much more dangerous. (Senator Heyburn, 40th Cong. Rec., pt. 3, p. 2750.)

I will assist the Senator there by an illustration. You can extract poison from tea or from coffee; you can extract poison from any grain; you can extract poison from many fruits; you can extract poison from the pits of almost any fruit. * * * That is one of the poisons existing in nature's composition. * * *

You can not add to them. You make an ordinary dish of any vegetable that is in common use. The poison is in that vegetable, but not in a poisonous state; it is not an active poison; it is simply a condition out of which a poison can be produced. Now, suppose you would say that because you can extract fusel oil from the grain of your breakfast food that you eat every morning, they

> should be permitted to add some other poison to it! Suppose you would say if there is poison in it already it can not do much harm to put in more! Suppose commercial cupidity should tempt someone to add to the dormant poison that is in a hundred things that we consume every day, are they to be permitted to do it? This bill says they shall not do it. (Senator Heyburn, 40th Cong. Rec., pt. 3, p. 2758.)

THE STANDARD, IF ONE REQUIRED.

The Government maintains that the court erred in assuming that the mere use of a distinctive name creates a new class, and that the standard used in determining whether a particular brand of food is adulterated is the sum total of all the elements, whatever they may be, of the particular combination. It is submitted that the standard, if one be necessary, must be something other than the peculiar conglomerate under consideration, and must be the normal constituents of foods of like character.

For example, if the article be a new compound food under the general class "flour," as in the case of *United States* v. *Lexington Mill and Elevator Co.* (232 U. S. 399), then, whether the compound be given a distinctive name or not, the article will be condemned under the act if it contain a poisonous ingredient, not normally found in "flour," in sufficient amount to "render such article injurious to health." So a soft-drink sirup containing a poisonous ingredient is condemned if the element is not one

found ordinarily, and in similar amount, in soft-drink sirups, and the applicability of the statute can not be escaped by merely adopting a distinctive name. (*United States* v. *Mayfield*, 177 Fed. 765; *Commonwealth* v. *Kevin*, 202 Pa. St. 23.) The questions as to what is the general class to which the particular article may be referred and whether the element in question is present in such general class in similar quantity and character, are for the determination of the jury.

However, if we take the formula of a particular article as the standard by which to measure it, that formula must be a constant. The formula of Coca Cola has undergone several changes. The element of the drink from which its name was evidently derived is "Merchandise No. 5." It was at first made simply by passing alcohol through coca and cola with some phosphate of lime. (R. 775, 776.) Among the ingredients secured and included in the drink was cocaine. Upon the termination of a suit against claimant, in 1904, in which the Government showed the presence of cocaine in Coca Cola (R. 1624), it entered into a contract with L. Schaeffer to make Merchandise No. 5 with cocaine eliminated (R. 972, 1625, 1626). Without cocaine the substance is not entitled to the name "coca" (R. 174, 178). This new process removed also the other alkaloids, the chlorophyll, the fatty matter (R. 1319, 1320), and according to the evidence for the Government, the flavoring matters and odors (R. 1778, 1785, 1794).

There is a still more important change. The original formula of Coca Cola required 28 pounds of caffeine to 1,250 gallons of sirup, and the drink was sold with 1 ounce of sirup to 6 ounces of water. In 1898 the claimant began to sell sirup for the bottling trade as well as to soda fountains, and the formula was so changed for the bottled drink as to use relatively more sugar and less caffeine and other ingredients (R. 721). The new formula requires 25, instead of 28, pounds of caffeine to 1,250 gallons of sirup (R. 780), and 1 ounce of sirup to 7, instead of 6, ounces of water (R. 753).

If a change can be made by decreasing by one-quarter the amount of caffeine and eliminating all the characteristics of the little coca used, it may also be made by doubling the amount of caffeine or by introducing cocaine, or by eliminating coca and cola entirely. It would be no more a variation from a standard in the second case than in the first. So the postulate of the court's decision, the existence of a definite standard for Coca Cola, is false.

CAFFEINE IN COCA COLA DELETERIOUS.

The Circuit Court of Appeals and the District Court both assumed that the caffeine in Coca Cola was a poisonous or deleterious ingredient which might render such article injurious to health. The trial judge repeatedly stated there was such a conflict in the evidence as to require the question to be submitted to the jury

(R. 1830, 1831). The assumption of the court in this regard was amply supported by the evidence.

Caffeine is not a food but a poisonous drug (R. 507), and is injurious to health. This was established by numerous witnesses for the Government (R. 283, 400, 404, 459, 478, 507, 528, 531, 589, 658); by recorded instances of deaths from caffeine (R. 243, 244, 1085); by treatises (R. 240, 306, 307, 446, 447, 449, 705, 706, 1077, 1078), including several treatises written by witnesses for the claimant (R. 945, 1088, 1089, 1233, 1358).

Experiments, some of them conducted without reference to this case, showed caffeine is harmful to animals, whether given pure (R. 215, 399, 613, 614) or in the form of Coca Cola sirup (R. 216, 218, 219, 399). Men are even more sensitive to the effects of this drug than are the lower animals (R. 235, 619).

The amount of caffeine in each drink of Coca Cola is a little over one grain (R. 130, 879), more than the therapeutic dose prescribed by the United States Pharmacopœia (R. 478). It may injure anyone (R. 179, 372, 373, 424, 456, 480, 533, 680, 681, 693). It is particularly apt to injure women, nervous persons, and persons of sedentary habits (R. 179, 335, 374, 402, 456, 481, 507, 529). It is certainly harmful to children (R. 179, 402, 480, 530, 958). Claimant admitted in its brief in the Circuit Court of Appeals that—

> Caffeine acts on the human system as a nerve, brain, and muscle stimulant. If used to ex-

> cess, its effects would undoubtedly be injurious to any person; and if used at all by infants and very small children, or persons suffering with certain kinds of disorders, especially those affecting the nervous system, its effects might be injurious (p. 64).

Coca Cola is drunk by all classes of persons, including many children (R. 265, 266, 382, 682, 692, 693, 696, 1489).

Caffeine, besides being harmful, is habit forming, whether taken pure or in Coca Cola (R. 179, 180, 278, 335, 337, 365, 374, 457, 482, 508, 705). Coca Cola is freely consumed at the rate of from two to twenty glasses a day (R. 278, 335, 1281, 1283, 1285, 1293). Its cumulative effect is greater than the effect of a single or occasional drink (R. 481, 616).

II.

MISBRANDING.

The count for misbranding alleged that the label on each package of the product seized, "Delicious and Refreshing Coca Cola," was a representation of the presence therein of the two substances coca and cola; that "Coca Cola" contained no coca and little, if any, cola, yet "was offered for sale under the distinctive name of said two substances coca and cola." (R. 27.)

Section 8 provides, in part, as follows:

> SEC. 8. That the term "misbranded," as used herein, shall apply to all drugs, or articles of food, or articles which enter into

> the composition of food, the package or label of which shall bear any statement, design, or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the State, Territory, or country in which it is manufactured or produced.
>
> That for the purposes of this Act an article shall also be deemed to be misbranded:
>
> * * * * *
>
> In case of food:
>
> First. If it be an imitation of or offered for sale under the distinctive name of another article.

There was evidence supporting the allegations of the libel that there was no coca and little, if any, cola in Coca Cola, and the Circuit Court of Appeals, for the purposes of its decision, assumed the question of their presence to be for the determination of the jury.

In a companion case, decided on the same day and referred to in the opinion in this case, the court stated that the name "Coca Cola" was "undoubtedly suggestive" (*Nashville Syrup Co.* v. *Coca Cola Co.*, 215 Fed. 527, 533), but held in the present case that to label the article "Coca Cola" was not misbranding, because Coca Cola "at the time of the passage of the law and ever since has been known under its own distinctive name," and that it was not "an imitation of another article, except as these words also raise the same question whether it is sold under the distinctive name of another article." (215 Fed. 535, 543, 544.)

The court further held that the use of the names of two separate articles was not forbidden by the act unless the names of such articles had theretofore been combined into a distinctive name.

The court in this connection say:

> These words constitute and are the distinctive name of claimant's product, and they are the distinctive name of nothing else. "Coca" is indicative of one article; "cola" is indicative of another, very distinct, but "Coca Cola" was not, in 1892, and (save for the general knowledge of plaintiff's article) is not now intelligently descriptive of any combination of the two. (215 Fed. 535, 544.)

The Government maintains that the act forbids the suggestive and misleading use of names of known articles, whether used in combination or not, and whether the deception be about the article itself or its ingredients. (*Steinhardt Bros. & Co.* v. *United States*, 191 Fed. 798.) It is immaterial whether the food is offered for sale "under the distinctive name of another article" or under the distinctive names of two other articles. (Revised Statutes, sec. 1.)

In *Libby, McNeill & Libby* v. *United States*, 210 Fed. 148, the defendants were prosecuted for selling a mixture of condensed milk and sugar under the name "Target Brand of Condensed Skimmed Milk." The Circuit Court of Appeals for the Fourth Circuit stated one of the questions in the case as follows:

> Does the first proviso to section 8 of the act permit the use as a name for a compound

> or mixture intended for food of common words which will to an ordinary man appear to be descriptive, but which, if so understood, will be false and misleading?

The court held that the act does not permit this and affirmed the judgment of conviction.

In *United States* v. *Three Hundred Cases of Mapleine*, N. J. 163, the Government sought to condemn 300 cases of "Crescent Mapleine" on the ground that the name falsely represented the article contained a product of the maple tree. Sanborn, J., in his charge to the jury said:

> The parties who coin the word give it a meaning, and then they send out the label with the word upon it. Now, the question is: Is there anything false in that word, any suggestion of any falsehood in that word, or any suggestion of anything misleading or deceiving in that word?

There was a verdict for the Government. (See also *United States* v. *Morgan*, 181 Fed. 587, affirmed in 222 U. S. 274; *United States* v. *Seven Cases of Buffalo Lithia Water*, Federal Food and Drugs Act and Decisions, p. 697; *Worden* v. *California Fig Syrup Co.*, 187 U. S. 516; *Manhattan Medicine Co.* v. *Wood*, 108 U. S. 218.)

The Insecticide Act of 1910 (c. 191, 36 Stat. 331) was modeled after the Food and Drugs Act and contains the words here under consideration. The decisions give that act the same construction. (*United States* v. *Two Cases of Sulpho-Napthol*, 213 Fed. 519; *United States* v. *Two Cases of Chloro-Naptholeum*, 217 Fed. 477.)

Under a construction permitting the use of a name misleading as to ingredients, provided only it is not unequivocally false as to identity, the act can not reach the commonest sort of fraud. If Coca Cola may be sold without containing a material amount of either coca or cola, then "Chocolate-Vanilla" sirup may be sold without containing either chocolate or vanilla, for each of these names is undoubtedly suggestive, but the combination of the two names has never been used for any distinctive compound.

CONCLUSION.

It is respectfully submitted that the Circuit Court of Appeals erred in their interpretation of the act and in sustaining the direction of a verdict by the trial court. The judgment of the Circuit Court of Appeals should be reversed.

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O

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CLERK

Supreme Court of the United States

OCTOBER TERM, 1915

No. 562

THE UNITED STATES, PLAINTIFF IN ERROR,

vs.

FORTY BARRELS AND TWENTY KEGS OF COCA-COLA, THE COCA COLA COMPANY OF ATLANTA, GEORGIA, CLAIMANT AND INTERVENOR.

IN ERROR TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT

BRIEF FOR THE COCA COLA COMPANY, Claimant.

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In the Supreme Court of the United States

OCTOBER TERM, 1915

THE UNITED STATES, PLAINTIFF IN ERROR,

vs.

FORTY BARRELS AND TWENTY KEGS OF COCA-COLA

No. 562

IN ERROR TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SIXTH CIRCUIT

BRIEF FOR THE COCA-COLA COMPANY CLAIMANT.

(PART I)

STATEMENT.

The article which is the subject matter of the controversy in this case is a syrup manufactured by the claimant, The Coca-Cola Company, of Atlanta, Georgia, and sold and used as a base for soft drinks both at soda fountains and in bottles. The evidence shows that the article contains sugar, water, caffeine, glycerine, lime juice and other flavoring matters.

(See record, page 836)

As used by the consumer, about one ounce of this syrup is taken in a glass mixed with about seven ounces of carbonated water, so that the consumer gets in an eight-ounce glass or bottle of the beverage, about 1.21 grains of caffeine. An ounce contains 480 grains, and therefore, the relative proportion of caffeine to other ingredients in the beverage as usually consumed is about as one to 3838 4-5.

The history of the manufacture and sale of the syrup as shown by the record is as follows:

In the year 1886, Dr. J. S. Pemberton, a pharmacist in Atlanta, Ga., compounded a syrup by a secret formula, which he called "Coca-Cola Syrup and Extract". Pemberton soon transferred the formula, name, label and good will to others; but up to the time of his transfer, he manufactured this syrup and sold it on the market as Coca-Cola, and in the year 1892, The Coca-Cola Company, the claimant in this case, acquired the formula, name, label and goodwill for the product from the persons to whom Pemberton's title had passed, these persons having, while owning same, sold said syrup under said name, and under said formula from the time they acquired the same until they transferred it. In 1892, the claimant, the Coca-Cola Company, registered in the patent office a trademark for the syrup consisting of the name Coca-Cola, and from the date that The Coca-Cola Company acquired said goodwill, name, trademark and formula, said company has manufactured and sold the syrup under the name Coca-Cola, in large and continuously increasing quantities, and the beverage made with it, has become very widely known and popular. Prior to 1898, the syrup was used only in making a fountain beverage,

that is, the syrup and carbonated water were mixed and sold direct from the soda fountain; but in that year, The Coca-Cola Company, made a contract whereby it granted to certain persons the right to use the syrup in the bottled drink, the syrup so used being manufactured by and purchased from the claimant, and being put up in the proportion of one ounce of syrup to seven ounces of carbonated water, in sealed bottles, containing approximately the same amount as the glasses in which it was sold at soda fountains. When this bottling contract was entered into, it was deemed advisable to make a slight modification in the manufacture of the syrup intended for bottling so as to make it slightly heavier or sweeter, and to accomplish this, the proportion of sugar was slightly increased, and the proportion of caffeine was slightly diminished in the syrup which was sold for bottling purposes.

(See Record, p. 836.)

In the manufacture of the syrup in accordance with the formula of J. S. Pemberton, certain extracts from the leaves of the Coca shrub and the nut kernels of the Cola tree were used for the purpose of obtaining a flavor. The ingredient containing these extracts is described and referred to in the record as "Merchandise No. 5." In obtaining the extract of Coca leaves, which went into this ingredient, it was always the object and purpose to eliminate the cocaine which is the chief and characteristic alkaloid found in the Coca leaves, and to use only the decocoanized extract in the syrup; but on or before the year 1902, in the trial of a case brought in Atlanta, Georgia, by The Coca-Cola Company against the United States Internal

Revenue Collector, to recover certain internal revenue taxes, paid under protest, (for which the collector insisted the Coca-Cola Company was liable, and for which the company insisted it was not liable), a witness on behalf of the collector testified that an anlysis which he had made of the syrup disclosed the presence therein of a very slight trace of cocaine, about 1-400 of a grain in one ounce, or 480 grains, of the syrup.

(See Record, pp. 1625, 1688.)

Another witness for the government testified that he was not able to determine any quantity of cocaine, stating that it was a small trace.

(Record, pp. 1653, 1654, 1655.)

Thereupon, the claimant made a contract for the manufacturing of this Merchandise No. 5 with Dr. L. Schaefer, a manufacturing chemist of Maywood, New Jersey, who guaranteed to entirely eliminate all trace of cocaine, and since that time, it is clearly shown that the syrup has contained no cocaine.

In 1905, the claimant again registered the name Coca-Cola as its trade mark, and in the declaration for trade mark, made and sworn to by Asa G. Candler, President of the claimant, it was averred that said name had been "in actual use as a trade mark of the applicant for more than ten years next preceding the passage of the Act of February 20th, 1905, and that to the best of his knowledge and belief, such use had been exclusive."

(Record, p. 1434.)

The record abundantly shows that the syrup has been made under the same formula (the cocaine not being a part of the formula) ever since it was origi-

nally compounded by J. S. Pemberton; that it has always been made, sold and consumed under the name Coca-Cola; and that when consumers, retailers and wholesalers call for Coca-Cola, they expect and intend to receive the product manufactured by The Coca-Cola Company.

(See Record, pp. 714, 1414, 1469, 1490, 1496, 1504, 1508, 1515, 1519, 1536 1581.
Also, stipulation, pp. 1588, 1590, 1591, and 1592.)

From the above testimony, and the admissions in the libel, there can be no dispute that this same product has been on the market under the name Coca-Cola for over twenty years; and that by "Coca-Cola" is meant the product of claimant, and that the exclusive right of the claimant to the use of that name in connection with said syrup, has been established by adjudications in various courts, and has been generally acquiesced in by the public.

(See testimony of John S. Candler, Record, pp. 712, et seq;

Testimony of Charles H. Candler, Record, pp. 742, et seq;

Record, pp. 822-835; 1280-1312.)

The libel or information under which the forty barrels and twenty kegs of syrup involved in the case were seized, charged that the syrup was adulterated and also, that it was misbranded, in violation of the Food and Drugs Act, June 30th, 1906.

It was averred:

1. That the syrup was a food product, and that it contained "an added ingredient, caffeine," which was

"a poisonous ingredient," and "a deleterious ingredient," which "may render and might have rendered said food product injurious to health."

2. That said food product "had been mixed, colored, powdered, coated, or stained," by the use of caramel, coloring substances, flavors, &c., "whereby damage or inferiority of the mixture" was concealed.

3. That the name "Coca-Cola" as applied to the product in question, was "a representation of the presence in said food product of the substances Coca and Cola"; that there were "such substances popularly known as Coca and Cola and under their own distinctive names, but said food product, Coca-Cola, contained no Coca, and little, if any Cola"; and that therefore, said product was (a) an imitation of the substances Coca and Cola, and (b), was offered for sale under the distinctive name of said two substances Coca and Cola.

4. That the labels on the barrels and kegs seized bore "a pictorial design of Coca leaves and Cola nuts," which was "a suggestion and representation" of the presence of Coca and Cola in said product, which representation and suggestion was "false and misleading."

(Record, pp. 25-28.)

The claimant answered the foregoing charges as follows:

1. It admitted that the product contained as one of its ingredients "a small proportion of caffeine," but denied that the caffeine was either an added ingredient, or a poisonous or a deleterious ingredient

"which may render or might have rendered said food product injurious to health."

2. It denied "each and every averment" in that paragraph of the information charging that the product was mixed, colored, etc., "whereby damage or inferiority" was concealed.

3. It denied that the name "Coca-Cola" as used on the labels on the packages containing said product, was a representation of the presence in said product of the substances Coca and Cola, and denied "that there are such substances known as Coca and Cola, under their own distinctive names". And it denied that said product was (a) an imitation of any other article or (b) was offered for sale under the distinctive name of any other article. It averred, however, that said product did contain "certain elements or substances derived from Coca leaves and Cola nuts."

4. It denied that the labels contained "any statements or pictorial designs regarding the ingredients and substances contained" on said product which were "false or misleading in any particular".

5. The answer further averred as follows:

> "That the name of said food product as contained on the labels aforesaid, towit, 'Coca-Cola' is the distinctive name of said product, under which said product is now known and sold, and has been known and sold for more than twenty years past; that said food product is a mixture or compound, which does not contain any added poisonous or deleterious ingredient, and is not an imitation of, or offered for sale under the distinctive name of, any other article; and that said name is accompanied on the same label with a

statement of the places where said article is manufactured or produced;"

wherefore

"said article is not to be deemed adulterated or misbranded under the provisions of said Food and Drugs Act of June 30, 1906."

(Record, pp. 28-30.)

A jury was demanded by the claimant, to try the issues made by the foregoing pleadings, and after the evidence had all been introduced on both sides, the claimant moved the court for peremptory instructions to the jury to return a verdict in favor of the defendant on all the issues. The court ruled on this motion as follows:

"1. Applying the Act as thus construed to the undisputed facts in evidence, I find the facts established without any contradictory evidence, to be: That the name Coca-Cola is a trade name which has for many years been given by the manufacturer to the food product in question, and upon which a trade mark was many years ago obtained; that this food product is an artificial compound used in the preparation of beverages, consisting of a sweet syrup, colored with caramel, with some phosphoric acid, lemon juice and other minor ingredients, with perhaps some ingredients or qualities derived from the coca leaves and cola nuts, which are used to a certain extent in its preparation, after being subjected to a process by which the cocaine and certain other ingredients are extracted, and also containing as an essential ingredient of the compound, caffeine, obtained in the main by chemical extraction from theine; that this compound has been for many years manufactured under a formula prescribing certain definite proportions of such caffeine as one of

its essential ingredients; that for many years as so manufactured and sold it has regularly and habitually contained the same approximate amount of caffeine, being about one and one-fifth grains to each fluid ounce of the syrup, although slightly less caffeine is contained in the syrup prepared for use in bottles than in that prepared for use at soda fountains, and although the percentage of caffeine in each individual container may vary slightly owing to process of manufacture employed, the average caffeine content being, however, substantially as above stated; that for many years this compound containing such caffeine has been sold under this trademark name of 'Coca-Cola' has been extensively advertised under this trademark name, and has under this name become generally known to the trade and to consumers in the United States; that no other article of food or beverage has been either manufactured or sold under the name of 'Coca-Cola'; that it imitates no other article, and is not sold under the distinctive name of any other article and that this name distinguishes this particular product from all other beverages and articles and clearly identifies it as a particular kind and brand of beverage made by its manufacturer and sold under this name, and distinguishes it from all other beverages or food products manufactured and sold by other persons.'

United States vs. Coca-Cola, 191 Fed. Rep., 431, (436).

2. That as "Coca-Cola" was the distinctive name of the product in question, and as the product did not, according to the undisputed evidence, contain any **added** poisonous or deleterious ingredient, "it should not be deemed misbranded, within the meaning of the Food and Drugs Act, in so far as any statement of

(or) suggestion in the name itself is concerned"; because obviously, if the article contains the constituents which are "normally and regularly contained under the distinctive name under which it is sold and under which it is known to the public" the name is not misleading, "but on the contrary serves to directly inform the public that it is the specific article which the public knows under that name and desires to buy." Therefore, he held that the claimant was entitled to peremptory instructions on the charges in the libel that the product involved was (a) an imitation of the substances Coca and Cola, and (b) was offered for sale under the distinctive name of said two substances.

3. On the charges that (a), the product was mixed, colored, etc., so as to conceal damage or inferiority, and (b), the pictorial designs of Coca leaves and Cola nuts on the labels constituted "a suggestion and representation" which was "false and misleading," he held the libellant was entitled to go to the jury, and claimant's motion for peremptory instructions on these issues was overruled.

(Record, pp. 1894-1902.)

United States vs. Coca-Cola, 191 Fed. Rep., 431.

Thereupon counsel for the libellant dismissed the libel without prejudice as to the questions involved in the issues last referred to, and the court then instructed the jury to return a verdict in favor of the claimant, which was done.

(Record, pp. 1902-1903.)

A motion for a new trial having been made on behalf of the libellant and overruled, and the case having been affirmed by the Circuit Court of Appeals, **(United States vs. Coca-Cola,** 215 Fed. Rep., 535), the case has now been brought to this Court.

(PART 11)

In order to clearly understand the questions involved, it becomes necessary at this point to consider:

I.

THE CHARGE IN THE LIBEL ITSELF.

The original libel was filed on the 21st day of October, 1909, and it charged that The Coca-Cola Company transported in interstate commerce a consignment of forty barrels and twenty kegs of a **product** labeled "delicious and refreshing Coca-Cola." It further charged that said **product** as above described is a **food product**, and contains an added ingredient, caffeine, which is a deleterious ingredient, and may render said **food product** injurious to health; that said **food product** does not contain the chief, active prinple of Cola, and that said **food product** was therefore, misbranded; and that said **food product** as aforesaid was manufactured, branded and shipped in violation of law.

(Record, pp. 1 and 2.)

It will be noted that the attachment was levied on "19 barrels of **Coca-Cola,**" and also "18 barrels of said Coca-Cola and on 20 kegs of same."

(Record, p. 5.)

The libel was amended on the 27th day of November, 1909, and it was alleged that **said product** was shipped in violation of the law, and that **said product** contains an added ingredient, caffeine, and that **the product, Coca-Cola** does not contain any cocaine, and that the **product Coca-Cola** leads one to believe, etc.

(See Record, p. 10.)

In this amendment it was also stated that forty barrels and twenty kegs of a product was labeled "Delicious and Refreshing Coca-Cola," and that **said product, which is a food product,** was shipped in violation of the Food and Drugs Act of June 30th, 1906, and that the **product** contains an added ingredient, and that the word Coca used as part of the name of **the product Coca-Cola** leads one to believe that the article contains the active, medicinal agent of the Coca leaves, &c.

(See Record, p. 11.)

The libel was again amended, and the amendment filed on February 3rd, 1910, in which amendment it was alleged that "**The Coca-Cola Co. has for a number of years past, been engaged in and now is engaged in the manufacture and sale of a food product known as Coca-Cola, and that said product was adulterated and misbranded. Said product Coca-Cola is adulterated in this:**

(See Record, pp. 16, 17.)

The libel was again amended, and the amendment was filed for record March 3rd, 1910, in which amendment it was alleged that said barrels and kegs containing **said product Coca-Cola** were misbranded and shipped for sale in violation of the law, and that said **food product Coca-Cola contains no Coca nor Cola, and that said product Coca-Cola** is adulterated in this:

(Record, pp. 19, 20.)

The final amended libel was filed January 6th, 1911, in which it was prayed that seizure be had for the condemnation **of forty barrels and twenty kegs of a certain article of food or food product, purporting and represented to be Coca-Cola.** It was alleged that forty

barrels and twenty kegs **of said food product Coca-Cola** was transported in interstate commerce, and that thus transported for sale, were each and all labeled, and that the forty barrels and twenty kegs remained unloaded, unsold, or in original, unbroken packages, in Chattanooga, and that **said food product** as above described and stated was adulterated under the Act of Congress, and that the **said food product** contained an added deleterious or poisonous ingredient, and further, **that said food product** had been mixed, etc., whereby damage or inferiority of the **food product** Coca-Cola was concealed, **and that said food product Coca-Cola** was misbranded because said **food product Coca-Cola** contained no Coca and little if any Cola.

(Record, pp. 25, 26, 27.)

From a review of the libel originally filed, and the amendments thereto, it appears that the charge in this case was, that a food product Coca-Cola was adulterated and misbranded, within the definition of the two terms "misbranded" and "adulterated," as given under the act of June 30th, 1906.

> "The conclusion thus reached is strengthened by a consideration of the pleadings in this case. In the libel it is alleged that the food product 'Coca-Cola' which it was sought to condemn is adulterated in that it contained an 'added' ingredient, caffeine, which was and is both poisonous and deleterious. Yet the entire proof unquestionably shows that the caffeine contained in the article 'Coca-Cola' is one of its regular, habitual and essential constituents, and that without its presence, that is, if it were de-caffeinized, so to speak, the product would lack one of its essential elements and fail to produce upon the consumers

a characteristic if not the most characteristic effect which is obtained from its use. In short, Coca-Cola without caffeine would not be Coca-Cola, as it is known to the public and would not produce the effect which the Coca-Cola bought by the public under that name produces, and if it were sold as 'Coca-Cola' without containing caffeine, the public buying it under this name would be in fact deceived."

United States vs. Coca-Cola, 191 Fed. Rep., 431, (at 437-438).

It appears further, from the record without dispute, that this food product Coca-Cola, **has always contained caffeine** as one of its ingredients.

(PART III)

THE CONSTRUCTION AND PURPOSE OF THE ACT.

"It is a well settled rule of construction that a statute ought to be so construed that if possible no clause, sentence or word shall be surplus, void or insignificant."

Montclair vs. Ransdell, 107 U. S., 147.

"It is the duty of the courts of justice so to construe all statutes as to give full effect to all the words in their ordinary sense."

Bend vs. Hoyt, 13 Pet., 263.

In construing a statute, every section, provision and clause should be explained by reference to every other, and if possible, every clause and provision shall avail, and have the effect contemplated by the legislature.

"One portion of a statute should not be construed to annul or destroy what has been clearly granted by another. The most general and absolute terms of one section may be qualified and limited by conditions and exceptions contained in another, so that all may stand together."

Peck vs. Jenness, 7th Howard, 612, 623.

In **U. S. vs. Lexington Mill & Elevator Co.,** 232 U. S., 399, (409), the Court says:

"The statute upon its face shows, that the primary purpose of Congress was to prevent injury to the public health by the sale and transportation in interstate commerce of misbranded and adulterated foods. The legislation, as against misbranding, intended to make it possible that the consumer should know that an article purchased was what it purported to be; that it might

be bought for what it really was, and not upon misrepresentations as to character and quality. As against adulteration, the statute was intended to protect the public health from possible injury by adding to articles of food consumption, poisonous and deleterious substances which might render such articles injurious to the health of consumers.

"If this purpose has been effected by plain and unambiguous language, and the Act is within the power of Congress, the only duty of the courts is to give it effect, according to its terms. This principle has been frequently recognized in this court (**Lake County vs. Rollins,** 130 U. S., 662, 670):

> 'Where a law is expressed in plain and unambiguous terms, whether those terms are general or limited, the legislature should be intended to mean what they have plainly expressed, and consequently, no room is left for construction.'

"(**Hamilton vs. Rathbone,** 175 U. S., 414):

> 'The cases are so numerous in this court to the effect that the province of construction lies wholly within the domain of ambiguity, that an extended review of them is quite unnecessary.'

> "Furthermore, all the words used in the statute should be given their proper signification and effect.

"In **Washington Market Co. vs. Hoffman,** 101 U. S., 112, Mr. Justice Strong said:

> 'We are not at liberty to construe any statute so as to deny effect to any part of its language. It is a cardinal rule of statutory

construction that significance and effect shall, if possible, be accorded to every word. As early as in Bacon's Abridgement, Section 2, it was said that, " 'A statute ought, upon the whole, to be so construed, that, if it can be prevented, no clause, sentence or word shall be superfluous, void or insignificant.' " This rule has been repeated innumerable times.'

"Applying these well-known principles in considering this statute, we find that the 5th Subdivision of Section VII provides that food shall be deemed to be adulterated, 'If it contain any added poisonous or other added deleterious ingredients which may render such article injurious to health.' The instruction of the trial court permitted this statute to be read without the final and qualifying words, concerning the effect of the article upon health. If Congress had so intended, the provision would have stopped with the condemnation of food which contained 'any added poisonous, or other added deleterious ingredient.' In other words, the first and familiar consideration is that, if Congress had intended to enact the statute in that form, it would have done so by choice of apt words to express that intent. It did not do so, but only condemned food containing 'an added poisonous or other added deleterious ingredient' **when such addition** might render the article of food injurious to health. Congress has here, in this statute, with its penalties and forfeitures, definitely outlined its inhibition against a particular class of adulteration."

See also,

U. S. vs. Antikamnia Chemical Co., 231 U. S. 654, 665.

"The title and the act itself, when carefully read and considered, demonstrated the fact that

the sole purpose of its enactment was, (1) to protect purchasers from ingenious deceits by the sale of inferior for superior articles; (2) to protect the health of the people by preventing the sale of normally wholesome articles to which have been added substances poisonous or detrimental to health."

Hall-Baker Grain Co. vs. U. S. 198 Fed., 614, 616.

(PART IV)

THE SCOPE AND PROVISIONS OF THE FOOD AND DRUGS ACT OF JUNE 30TH 1906.

The Act in question is entitled:

"An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors and for regulating traffic therein and for other purposes."

The **first** section prohibits the manufacture within any Territory or the District of Columbia, of "any article of food or drug which is **adulterated or misbranded** within the meaning of this Act," and provides the punishment for its violation.

The **second** section prohibits interstate shipments of "any article of food or drugs which is **adulterated or misbranded** within the meaning of this Act" and provides the punishment for its violation.

The **third** and **fifth** sections contain provisions for the enforcement of the law.

The **sixth, seventh** and **eighth** section define the terms "food" and "drugs" as used in the Act and also set forth with considerable detail the conditions under which articles shall be deemed to be **adulterated** and **misbranded** for the purposes of the Act.

The **ninth** section provides for immunity from prosecution under the Act to any dealer who can establish a guaranty from the wholesaler, manufacturer, etc., residing in the United States from whom he purchases to the effect that the articles purchased are "not **adulterated** or **misbranded** within the meaning of this Act."

The **tenth** section provides for "seizure, for confiscation, by a process of libel for condemnation" of "any article of food, drug or liquor that is **adulterated** or **misbranded** within the meaning of this Act and is being transported from one state," etc., to another for sale. It was under the provisions of this section that the present proceeding was brought.

The **eleventh** section provides for the examination of foods and drugs imported or offered for import, into the United States, and further provides that if it appears "that any article of food or drug offered to be imported into the United States is **adulterated** or **misbranded** within the meaning of this Act, **or is otherwise dangerous to the health of the people of the United States,**" such article shall be refused admission and shall be destroyed unless exported by the consignee within three months.

The **twelfth** section defines terms and contains some miscellaneous provisions not material to be here noticed, and the **thirteenth** and last section prescribes the date on which the Act shall become effective.

It is manifest from the foregoing analysis that the Act does not undertake to prohibit, or punish, the manufacture or interstate sale or transportation of **poisonous, deleterious** or **unwholesome** foods or drugs **unless they are adulterated or misbranded** within the meaning of the Act. It is only articles offered for **importation** into the United States from foreign countries that may be condemned under the Act on the ground that, although they may not be adulterated or misbranded, they are "otherwise dangerous to the health of the people." So far as this Act is concerned, therefore, there is no restriction on the kind of

things that may be manufactured, sold, transported or consumed as food, **provided they be not adulterated or misbranded**, and a manufacturer or dealer may make, sell and transport within the United States for food purposes, anything he chooses to sell and can persuade anyone else to buy without any interference on the ground that the article he is selling is unwholesome or deleterious or poisonous, **unless** the article is adulterated or misbranded within the definitions of the Act.

In other words, **this is not a sumptuary law**, providing what people may or may not eat, or what they may or may not sell for food, but it is a law **intended to prevent and punish fraud and deception**, so as to enable every man to get what he wants and to get it in a pure and unadulterated state.

That the law-makers did not intend by this Act to interfere with the sale and transportation of deleterious or poisonous substances as such, except in the case of imports, is clearly manifested by the provisions of clause second, under the head, "In the case of food," in section eight of the Act. This clause provides, among other things, that an article of food shall be deemed to be misbranded, for the purposes of the Act "if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha, or beta eucaine, chloroform, cannabis indica, choral hydrate, or acetanilide, or any derivative or preparation of any of such substances contained therein."

The record affirmatively shows, and the Court would probably know judicially, that each of the substances enumerated in the foregoing list is a narcotic poison,

highly deleterious, and practically certain to render any article in which it appears injurious to health. Yet the Act clearly recognizes that its passage will not interfere with the use of such substances in articles of food, if people want to use them, and the only regulation of their use which it was deemed proper to prescribe was that, in view of their habit-forming proclivities, the purchaser should be correctly informed by the label what quantity or proportion of such substances is contained in the article of food he is buying.

We repeat, therefore, that even if it were established that caffeine is a poisonous or deleterious substance, which might render the article in controversy injurious to health, its presence would not render the article subject to seizure and condemnation under the provisions of the Act unles it constituted an **adulteration** of the article within the meaning of the Act. And so it is that the libel is based, not on the contention merely that the caffeine contained in the product seized is a **poisonous or deleterious** substance, but on the ground that it is **an added** poisonous or deleterious ingredient, which may render the product injurious to health, and therefore, the product is **adulterated** within the meaning of the Act. The particular provision of the Act on which this portion of the libel is based is Clause Fifth under the heading, "In the case of food" in section 7, which provides that an article shall be deemed to be adulterated in the case of food "if it contain any **added** poisonous or other added deleterious ingredient which may render such article injurious to health." The trial court held, as we have seen, that according to the undis-

puted evidence the caffeine in the product was not an added ingredient, and therefore did not constitute an adulteration.

The object of this particular Act has been set out and discussed in the following cases:

Savage vs. Jones, 225 U. S., 501, at p. 530;

Standard Stock Food Co. vs. Wright, 225 U. S., 540;

United States vs. 65 Cases of Liquid Extract, 170th Federal, 449 (at p. 455);

McDermott vs. State of Wisconsin, 228 U. S., 115.

And so, the Court of Appeals held:

> "In applying a statute to particular facts and where it becomes necessary to construe language to which opposing sides give different meanings, it is vital to have in mind the essential scope and purpose of the act. The present case well illustrates the importance of this consideration. Much of the government's contention as to the extent of the prohibitions here found rests upon the theory that Congress intended to protect the public health by preventing (to the extent of the constitutional power resting in the commerce clause) the sale or transportation of deleterious foods. The opposing contention denies this broad purpose and concedes only the intent to prevent any fraud or deception in the sale of foods. The title to the act is broad enough to support the Government's utmost claim as to general purpose. It is an 'Act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods,' etc. If there was nothing in the body of the act expressly prohibiting the sale of deleterious food, qua deleterious, this title would furnish some

reason for expanding in that direction any terms of prohibition there might be ambiguous enough to permit the implication (Goodlett vs. L. & N. R. R., 122 U. S., 391, 408, 7 Sup. Ct., 1254, 30 L. Ed., 1230); but we find in sections 11 which relates solely to importations from foreign countries, an express direction that such importation shall be wholly forbidden if the food is adulterated or misbranded 'or is otherwise dangerous to the health of the people of the United States'. We have therefore a provision which responds to the call of the title in this particular and makes it unnecessary to resort to any otherwise unjustifiable construction for the mere purpose of giving some effect to all parts of the title. With the exception of this clause of Section 11, every other directly or indirectly prohibitory clause of the act relates to articles which carry the taint of deception and fraud by being adulterated or misbranded. Section 2 prohibits interstate commerce in any article 'which is adulterated or misbranded, within the meaning of this act', and subsequent clauses of the same section refer to 'any such article so adulterated or misbranded within the meaning of this act,' and to 'any such adulterated or misbranded foods.' The expert examination provided for by section 4 is to determine 'whether such articles are adulterated or misbranded'. Section 7 defines when, for the purposes of the act, an article shall be deemed to be adulterated, and Section 8 defines the term 'misbranded' as used in the act, and specifies when, for the purposes of the act, an article shall be deemed to be misbranded. Section 9 prescribes a certain immunity from prosecution when there is a guaranty to the effect that the article is not adulterated or misbranded within the meaning of the act. Section 10 provides for the seizure and forfeiture of the offending articles, but its

effect is limited to the article which is adulterated or misbranded within the meaning of the act. A subsequent clause of Section 10 furnishes some superficial support for the broader theory of the purpose of the act by providing for the disposition of the offending article, if it 'is condemned as being adulterated or misbranded or of a poisonous or deleterious character, within the meaning of this act'; but this support is only superficial, because the power to condemn, given by the first part of section 10, rests on the finding that the article is 'adulterated or misbranded'. This general reference to a poisonous or deleterious character as ground of condemnation must be to instances where that character, by incorporation into the article, causes the fatal adulteration or misbranding. Considering all these parts of the act, together with its title, we cannot doubt that, so far as its general purpose and intent furnish any aid for interpretation, that general purpose and intent must be deemed to be the prevention of fraud and deception, so that the purchaser can get the thing he has a right to suppose he is getting rather than the protection of the public health to the extent of preventing the purchaser from deliberately and intentionally buying a particular food which is what it purports to be, even though a jury might think it 'deleterious'. If argument were needed to sustain this conclusion, it could be found in the provision as to drugs. Foods and drugs are put on the same basis throughout, save as to matters of definition, and some detailed requirements. There can be no room to suppose that the act was intended to prohibit broadly the sale of all deleterious foods and not to prohibit with equal breadth, the sale of all poisonous drugs. The latter supposition is impossible, and so the former cannot be accepted. Further support will

be found in the provisions which, by necessary implication, permit the sale of foods containing cocaine, morphine, and the like, provided the purchaser is properly advised of the contents. These views of the general purpose of the act have been accepted by the decisions, so far as they go. **Savage vs. Jones,** 225 U. S., 501, 533, 535, 32 Sup. Ct., 501, 56 L. Ed., 1182; **McDermott vs. Wisconsin,** 228 U. S., 115, 131, 33 Sup. Ct. 431, 57 L. Ed., 754, 47 L. R. A., (n. s.), 984; **United States vs. Lexington Co.,** 232 U. S., 399, 409, 34 Sup. Ct. 337, 340 (58 L. Ed., 658).

"The general language of the court in the last cited case that 'the statute was inteded to protect the public health from possible injury' is not at all inconsistent with the view that we have expressed, because that language is used with reference to adulterations and the addition to known foods of injurious elements. The very word 'adulterated' imports fraud and deception; it implies that the article is not what it purports to be."

United States vs. 40 Barrels and 20 Kegs of Coca-Cola, 215 Fed. Rep., 535 (at 538-539).

Nor do the cases referred to by the Government sustain any different proposition. In the case of **French Silver Dragee Co. vs. United States,** 179 Fed. Rep., 824, we understand the obiter as follows: To safeguard the public health by forbidding the **addition** to foods of poisonous or deleterious ingredients. And the same thought is expressed in each of the cases referred to. In **United States vs. 1950 Boxes of Macaroni,** 181 Fed. 427, we find the following: The object is the exclusion from interstate commerce of food products so adulterated as to endanger health. It

is the fatal adulteration each time. In **United States vs. Antikamnia Co.**, 231 U. S., 654, 665, this court said: "The purpose of the act is to secure the purity of foods and drugs, and to inform the purchasers of what they are buying."

Certain portions of the act are referred to to support the contention of the Government. The title does refer to "poisonous or deleterious". This part of the title finds support in Section 11 of the Act concerning importations, and in-so-far as that is concerned, it is a health provision. Section 8, Paragraph 2 is referred to. This, in our opinion, refers back to the fatal adulteration. Section 10, is in our opinion completely covered by the decision of the Circuit Court of Appeals in 215 Fed. 535, 539, **(United States vs. 40 Barrels and 20 Kegs of Coca-Cola).**

Concerning this very point raised by the Government we find the following in the Congressional Record of Feb. 20th, 1906, pages 2786, 2787.

> "MR. FULTON. I call attention of the Senator who has the floor to this language:
>
> 'And if such article is condemned as being adulterated or misbranded---'
>
> "Suppose that was all there was of it, or, rather, suppose it was of a poisonous or deleterious character, there certainly would be no objection to selling by the order of the court merchandise that might have been adulterated or misbranded. To be poisonous or of a deleterious character is one thing, and adulterated or misbranded is another; and it would be a wise discretion in the Court to order them to be condemned, destroyed, or sold.
>
> "Mr. Heyburn. That is in the alternative.
>
> "Mr. Fulton. It is to be assumed, I presume, that the poisonous articles would be condemned.

> "Mr. Spooner. This is predicated upon a prior condemnation, 'If such article is condemned as being adulterated;' otherwise the court has no jurisdiction over it. It is a judgment of condemnation upon an article, a proceeding in rem, to give the court any power of disposition at all."

The entire history of the debates in Congress, it seems to us, proves conclusively that this statute was not to prevent the manufacture and sale of foods, but to prevent the adulteration and misbranding thereof. This must be true, for the statute gives permission to use in foods the rankest poisons and derivatives thereof. (Sect. 8 "Foods", 2).

(PART V)

THE STATUTE CONTEMPLATES A STANDARD.

As we interpret the statute, it is necessary in order to find out and ascertain if there has been an adulteration under the statute, that some standard or unit should be ascertained. In the case of drugs, the statute itself sets out the standard or unit, that is, the Pharmacopoeia or National Formulary.

And the Government in the libel filed in this case set out the standard when it claimed to have seized a food product known and sold as Coca-Cola. In other words, the product known and sold as Coca-Cola is **the standard**; it is the product that must be adulterated.

We submit that the adulteration feature of the Act pre-supposes a finished product, and one that is to be consumed, because you could not adulterate unless you had something, some unit, to adulterate.

Gruley on Food and Drugs Act, p. 8.

Again, in order to determine whether or not an article shall be considered to be adulterated it is necessary to compare it with some standard definition or description of the article in question.

Gruley on Food and Drugs Act, p. 22.

And the Act itself, at the end of sub-section Fifth, Section 7, under "Foods," says: "The provisions of this Act shall be considered as applying only when said products are ready for consumption."

"Where there is no standard, the Court must fix for itself a standard, based upon the evidence before it."

Wilson vs. Wilson, 86 J. P., 175 (1904).

And the standard in this case was the food product Coca-Cola, as it was alleged by the Government that Coca-Cola was the product adulterated.

See Record, p. 62.

The libel charges:

> "Said food product as above stated and described was adulterated under the Act of Congress aforesaid in this: caramel and other flavoring substances, and by the use of certain flavoring substances, consisting of oil of lemon, sugar, syrup and lime juice, whereby damage or inferiority of the mixture (the **food product,** Coca-Cola) was * * *," etc.
>
> See Record, p. 62.

Circuit Judge Ward said, in defining a standard:

> "The trial judge taking judicial notice that standard lexicographers define the words 'salad oil' as 'olive oil', denied the defendant's motion to quash the information, on the ground that it alleged no offense, and afterwards, it being stipulated that the can had contained sesame oil, and not olive oil, he denied the defendant's motion to direct a verdict in their favor.
>
> "The Government, thereupon, rested, and the defendant showed by a large number of witnesses that for some forty years, a perfectly healthy oil for edible purposes had been made from cottonseed and sold in enormous quantities in this country as salad oil, and that other edible oils were made from the seed of sesame, a kind of grass, and from peanuts, and from corn, and sold as 'salad oil.'"
>
> **Von Bremen vs. U. S.,** 192 Federal, 905.

Again,

> "It was also error to refuse to let large dealers in this salad oil say what the understanding of the trade was as to the meaning of the word 'salad oil.'"
>
> **Ibid.**

"In referring to articles of food, and to protect the users thereof, the Legislature must have had in view some standard. Has the article acquired some well defined meaning?"

> **People vs. Jennings,** 94 N. W., (Mich.) 216. (132 Mich. 662).

And it is evident that a standard is obtained from the trade knowledge of that article.

> **McCord Merc. vs. U. S.,** 182 Fed., 47;
>
> **U. S. vs. St. Louis Coffee and Spice Mills,** 189 Fed., 193;
> **U. S. vs. Frank,** 189 Fed., 195;
> **Two Hundred Chests of Tea,** 9 Wheat, 431;
> **Hudson Mfg. Co. vs. U. S.,** 192 Fed., 920;
> **Libby, McNeil & Libby vs. U. S.,** 210 Fed., 148;
> **U. S. vs. Sweet Valley Wine Co.,** 208 Fed., 85;
> **U. S. vs. 75 Boxes of Pepper,** 198 Fed. 934;
> **Weeks vs. U. S.,** 224 Fed., 64.
> **Cadwalader vs. Zeh,** 151 U. S., 171.

And the Government has heretofore admitted, in many of its cases tried, that a standard must be established, and that the standard is established in finding out what is a given substance as recognized by reliable manufacturers and dealers.

> See Notices of Judgment, 3, 5, 9, 11, 14, 28, 31, 37, 48, 56, 71, 73, 74, 75, 81, 123, 130, 135, 136, 139, 141, 142, 143, 147, 148, 149, 150, 151, 152, 189, 823, 1450.

See especially, Notices of Judgment 123, 130 and 135; where the following words are used:

> "Vanilla extract or flavor, **as recognized by reliable manufacturers and dealers,** is the flavoring extract prepared from the vanilla bean and contains the soluble matters from not less than 10 grams of the vanilla bean to each 100 c. c."

The question then arises, what is the standard in this case? The libel itself says that it was the food product Coca-Cola, and the evidence shows that for many years past this food product contained caffeine as one of its ingredients. **The only standard for the product proven in this case was a food product, Coca-Cola, which has always contained caffeine.**

A careful reading of the Act itself proves conclusively that a finished product is presupposed, and not the ingredients that enter therein. It must be the finished product that is adulterated. For instance, under "Confections," in Section 7, it is stated: "If **it** contain terra alba," etc.

Under "Foods" it states: "If any substance has been mixed so as to reduce or injuriously affect **its quality,**" etc.

"If any substance has been substituted * * for the **article.**"

Again, "if any valuable constituent of the **article,**" etc.

Again, "if **it** be mixed, colored," etc.

Again, "if **it** contain any added" * * etc.

"If **it** consists in whole or in part," etc.

It is also evident from a comparison of Sections 6, 7 and 8 that the word "it" as set out in Sec. 7 refers not to the ingredients of the article itself, but to the

completed article, for in Section 8 not only are the words "drugs or articles of food" set out, but also "articles which enter into the composition of foods," and also, "ingredients or substances contained therein."

It is evident from the reading of the statute that the word it in Section 7, sub-Section 5, under "Foods" refers back to the words "an article," as set out in the first line of Section 7, and it necessarily follows that "an article" as set out in Section 7, refers to Section 6, wherein the term "Food" is defined and the term "Food" includes a beverage, whether simple, mixed or compound.

And again, Section 3 refers to foods and drugs that are manufactured or offered for sale in the District of Columbia, etc., and does not refer to the ingredients of the drugs of the foods that are offered for sale.

And again, the libel itself refers to the completed food product Coca-Cola, and under the Government's interpretation of what is the standard, it necessarily follows that the standard is the product as manufactured by the manufacturer, and the sole manufacturer in this case is The Coca-Cola Company, who, as the evidence proves, has been the only company to put out a product known as Coca-Cola, and has used this term exclusively for over a period of twenty years.

Therefore, the standard is Coca-Cola, as manufactured and made by The Coca-Cola Company, and this Coca-Cola as manufactured and made by The Coca-Cola Company contains, under the evidence, as one of its essential ingredients, caffeine.

It is charged by the libel and amendments thereto that the food product Coca-Cola was adulterated and

misbranded. The motion to advance admits that this compound has a distinctive name. This product has been made continuously since 1886, by the claimant, and its predecessors, and it has always contained caffeine. The question then arises, when a product has a set standard, according to which standard, caffeine is one of the ingredients, can that same ingredient be an "added" ingredient?

There really can be no dispute about the conclusion that the Act contemplates a standard---presupposes one. The Government admits that contention in the Motion to Advance, when they ask,

> "Is a compound food with a distinctive name adulterated under the act, if one of its ingredients is a poisonous or deleterious substance which may render such article injurious to health and which, though required by the formula of that particular compound, is foreign to and not normally found in foods of like character?"

The only question left is, what is the standard in this case? Can it be foods of like character? If so, what foods? Certainly this record only takes up three foods of like character, to-wit, coffee, tea and chocolate. If that be the test by which we obtain a standard, then these foods do normally contain caffeine, and caffeine is not foreign to foods of like character. Not another food is taken up in this record, and if we must resort to others to obtain a standard, then the only other foods mentioned in the record, contained caffeine.

But should we not apply the evidence to the act charged in the libel? The Government cannot go outside of the evidence and the libel, and cannot convict unless the charge as made in the libel is sustained by

the evidence. The evidence conclusively shows what Coca-Cola is---that it contains, and has always contained caffeine. Can it then, be contended that the caffeine is added?

Washburn vs. U. S., 224 Fed., 395, 398.

The decision of the lower court is sustained by one line of reasoning that does not involve any careful study or construction of the Act of Congress, but merely an application of the evidence to the Act charged in the libel.

The Government cannot go outside of the libel, and cannot convict unless the charge **as made in the libel** is sustained by the evidence.

The libel charges us with adulterating "Coca-Cola."

The first question, therefore, that must necessarily present itself to the court for determination, is, "What is Coca-Cola?"

An examination of dictionaries by the court shows that it is not a recognized **definable** word. If we had been charged with adulterating flour, or meal, sausage or mince-meat, the accepted definition found in the dictionaries would have afforded the court a basis on which to determine the normal ingredients of the "article," and the presence of **any other** than these **normal** ingredients might have afforded a question for the jury as to whether the **additional** ingredient was prohibited by the law.

As the court could not get a basis as to the **normal** ingredients, (that is, those ingredients that are and **always** have been included therein, and without which the "article" has **never** been made or existed) of Coca-Cola from the dictionaries, it must acquire this information solely from the evidence.

The undisputed evidence showed that the inclusion of caffeine was coincident with the discovery or **original** creation of Coca-Cola,---that there had never been any Coca-Cola anywhere at any time that did not contain caffeine; that without the caffeine, the article would not be the **same article** to which the name "Coca-Cola" had been originally, and continuously and exclusively up to this time, applied.

The definition of Coca-Cola thus supplied by the evidence must necessarily be accepted and used by the court in lieu of and in the same manner as it would have used and applied the **dictionary definition** of flour, meal, sausage or mince-meat.

When, therefore, the definition of Coca-Cola as defined by the evidence, to-wit, "a beverage syrup containing caffeine and other substances," is applied to the charge contained in the libel, the result is, to reduce the alleged charge of adulteration to the charge that the defendant had "adulterated a beverage syrup normally containing caffeine, by including therein the usual amount of caffeine which must necessarily be included therein in order to produce it."

So, the Court of Appeals held:

> "It is impossible intelligently to conceive the meaning of 'added,' unless we suppose a base upon which the addition is placed, and we at once meet the question: If caffeine is the addition, what is the base? For 15 years before the passage of the Act, Coca-Cola had been an existing article of food (within the statutory definition of 'food'), and in the latter 10 years of that period it had been one of the most widely known and used articles of its general class. It was a compound; it had no distinctive base (unless water, by reason of its lar-

ger proportion); it was made up of water, sugar, caffeine, phosphoric acid, glycerine, lime juice, coloring matter, flavoring matter and 'Merchandise No. 5.' Each of these elements is more or less important; there seems to be no method of determining their relative importance; but if any one may be rejected as comparatively negligible or secondary, or non-characteristic, that one is not caffeine. In the manufacturing process water and sugar are boiled to make a syrup; this boiling is repeated; then caffeine is 'added,' and then the syrup is boiled once or twice more; the syrup is then put in a cooling tank and then into a mixing tank in which the remainder of the process is carried on, and in which the other elements become a part of the ultimate combination. It is plain as may be that without caffeine the mixture would not be Coca-Cola, and the purchaser who had been using it in its standard form 15 years when the act was passed, and who might then buy an article of the same name which did not contain any caffeine, would rightfully think that he was deceived; and yet it is said that the act intended to prevent misleading the public is violated unless the public is thus misled.

"It is another form of the same thought to say that the mere use of the word 'adulterate' or 'added' implies the existence of a standard, and it is a contradiction in terms to say that the use of an element necessary to constitute the standard is an adulteration of, or addition to, the standard; but to this contradiction, the argument for the Government necessarily leads. So, further, we find that clause 3 of that division of section 7 relating to foods declares adulteration if any valuable constituent has been abstracted. Caf-

feine is a valuable constituent. If it is omitted, the article is adulterated, and if it is included, the article is adulterated. We must break clause 3 to keep clause 5."

United States vs. 40 Barrels and 20 Kegs of Coca-Cola, 215 Fed. Rep., 535 (at p. 540).

PART VI.

IS THE CAFFEINE IN THE PRODUCT INVOLVED IN THE CASE AN "ADDED" INGREDIENT WITHIN THE MEANING OF THE FOOD AND DRUGS ACT?

1. It must be conceded that some significance is to be attached to the term "added" as used in the Act, and that when Congress provided that an article should be deemed to be adulterated "if it contain **any added**" poisonous or other added deleterious ingredient, the language used does not justify the condemnation of an article as adulterated merely because it **contains** a poisonous or deleterious ingredient, unless that ingredient be also an **added** one.

(a) That the word "added" was not used idly or without being intended to have any meaning, is demonstrated by comparing the provisions as to what shall constitute adulteration in the case of confectionery, with those applicable in the case of ordinary food. In the case of confectionery, the Act provides that it shall be deemed to be adulterated "if it contain terra alba," etc., "or other mineral substance or poisonous color or flavor, or **other ingredient** deleterious or detrimental to health." The very next clause of the Act is that which prescribes what shall constitute adulteration in case of food; and instead of repeating the same language which had been used in the case of confectionery, as would no doubt have been done if there had been no intention of making a distinction between the two classes of articles, the qualifying word "added" is brought into use.

So it is that by the first of these two consecutive clauses the Act provides that confectionery shall be deemed to be adulterated if it contain any "poisonous color or flavor or **other ingredient** deleterious or detrimental to health," while by the second, it provides that food shall be deemed adulterated if it contain "**any added poisonous or other added deleterious ingredient.**" And in subsequent provisions of the Act this qualifying word is carefully preserved; as in the proviso in Clause Fourth, under the heading, "In the case of foods," in Section 8, to the effect that "an article of food which does not contain **any added poisonous or deleterious ingredient** shall not be deemed to be adulterated or misbranded, in case of mixtures or compounds, etc., and the proviso under sub-division second of this same clause that "nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome **added** ingredient to disclose their trade formulas," etc. It is to be noted that proprietary foods do not appear in a state of nature. Why repeat "added" in these two sections?

It being evident, therefore, that the word "added" as used in the Act has some significance, the questions to be determined are, first, what is its meaning, and second, is the caffeine in Coca-Cola an added ingredient within that meaning?

(b) Taking the ordinary definition of the word "added" there would seem to be no great difficulty in arriving at the meaning which the law-makers intended to convey by the use of it in the present instance. The idea which the word "add" suggests is the putting on to, or into, an existing entity something

which was not previously a part of it; and whether a particular thing or substance is **an addition** to that with which or into which it is put, or is a **constituent element** of it, depends largely on the circumstances and the point of view. To illustrate:

If a man starts out to build an eight-room house, and does so, no one of the eight rooms would constitute **an addition** to the house; but if he starts out to build a seven-room house, and does so, and then afterwards concludes to make an eight-room house of it, by building another room, the last room is **an addition** to the house, being something added to, and not constituting a part of, the house as originally contemplated and built. And so if a man professes to sell straight whiskey, and puts water into it, in addition to that amount of water which is normal in it, this water is **an added** ingredient, not being a constituent element or ingredient of the whiskey as usually and properly made. But on the other hand, if one professes to make and sell a compound, made of half whiskey and half water, then the required proportion of water would not be an added ingredient in the compound, because it is one of its constituent elements, without which the compound would not be what it professes to be. To vary the illustration: if tomato catsup is compounded of the substances which are recognized as the normal constituents of the article when properly made, no one of those constituents would be **an added** ingredient; but if a foreign substance, as for instance benzoate of soda, is put into the catsup, it is **an added** ingredient because not one of its normal constituents, and if it is a poisonous or deleterious ingredient such as might render the catsup injurious to

health, it would constitute an adulteration within the meaning of the Act. Alcohol, while recognized as at least a deleterious, if not a poisonous substance, is not an adulteration in whiskey, or in flavoring extracts, etc., because it is a normal and essential constituent of such articles. To state the rule in the abstract form, no substance can be properly said to be an added ingredient in an article of which it is one of the essential constituents, and conversely, every substance which is not an essential or constituent element of a given article is an added ingredient if present in that article.

We take it that the Government has misconceived our idea of the meaning of "added," when they say, by the mere device of adding any ingredient whatsoever to an adulterated simple food, and proclaiming a formula and a distinctive name, the Act would not be applicable. (Page 11). Such is not the position of the claimant. You must first consider the standard; find whether there has been anything additional placed with it; and find whether it is poisonous or deleterious, if so, may it render the article injurious to health? The distinctive name would not protect this product with an added ingredient.

On this question, we call attention to the case of **Friday vs. Hall,** 216 U. S., 449 (at p. 455), (26 L. R. A. (n. s.), 475), where this court says:

> "The production of concrete arches, or piers, or abutments, is the result of successive steps. The combination of raw material, the sand, the limestone, the cement and the water, **produced a product** which undoubtedly was manufactured."

If we desire to make concrete, there are certain materials necessary to make it up. Could we say that

they are "added?" Or, take the example given by the Government, could we say that water, charcoal and sulphur or either of them are **added** to gunpowder?

Bearing in mind that the clearly evinced purpose of the Food and Drugs Act was not to prescribe what the people may or may not eat, but to protect them from fraud and imposition, the reason for the use of the word "added" in the provisions under consideration is perfectly clear. When a man buys whiskey he expects to get some alcohol in it, and he is not deceived or imposed on because of the presence of the alcohol, although it may be said to be a poisonous and deleterious ingredient. But when one buys an article which contains an **added** ingredient---that is, something which is not one of its normal constituents---he is deceived, and if that added ingredient is of a poisonous or deleterious nature, his health, and perhaps his life, is being imperiled. Therefore it is that the Act, while not undertaking to interfere with the manufacture, sale or transportation of articles containing poisonous or deleterious ingredients among their normal constituents, has most emphatically condemend the **addition** to food products of substances of that kind.

(c.) If we are correct in the foregoing discussion as to the proper construction of the Act, then there can be no question as to whether the caffeine in Coca-Cola is an added ingredient within the meaning of the Act. The evidence establishes that the name "Coca-Cola" was never applied to any other food product than the one in controversy here, and that it has been used as the distinctive name of that particular product for over twenty years, and that the product known and sold by

this name has always contained as one of its constituent elements practically the same proportion of caffeine which is found in the samples attached in this case.

(See Record, pp. 82, 132, 365, 724, 730, 731, 742, 743, 744, 745, 746, 1624, 1862.)

In view of these facts, it is perfectly clear that an article containing the other ingredients of this product, but omitting the caffeine would not be Coca-Cola, within the meaning of that name as known to and used by the public, and the trade; and if one should undertake to put up and sell as Coca-Cola an article which did not contain caffeine, as one of its ingredients (1) He would in the first place, be guilty of deceiving and defrauding the public, or at least that portion of it which had been accustomed to, and wanted to buy, the article generally sold under that name; (2) In the second place, the article would be misbranded under the Act, because "an imitation of or offered for sale under the distinctive name of another article" and (3) The article would probably be adulterated under the Act because of the abstraction of one of its valuable constituents.

Unless, therefore, an article can be "adulterated" by the presence of one of its essential constituent elements, without which it would not be what its name implies, and therefore would not be entitled to use the name, and unless such an element constitutes an addition to an article which could not exist at all without it, then the product Coca-Cola is not adulterated by the presence of its caffeine content.

And it will be observed in this connection that the libel is based on the contention that the product Coca-

Cola is adulterated by the addition of caffeine, and not on the theory that the sugar and other ingredients which enter into the compound are adulterated because caffeine is added to them. It is true that two and two added together make four, but we are not charged with adulterating two, but with adulterating four. **The question of the right under the law to use caffeine as an ingredient in a food product is not presented by the record**; the only issue made being whether or not it constitutes **an adulteration** as an **added** ingredient, in this particular compound.

> "The term 'adulterate' means to make impure by the admixture of other, or baser, or foreign ingredients; to render counterfeit."
>
> **City of St. Louis vs. Judd**, 139 S. W., 441. (236 Mo., 1).

It implies, first, a standard, by comparison with which the question of adulteration can be determined; and second, a departure from that standard. In other words, it necessarily involves the **adding** to a known article, of something which does not properly belong to, or constitute a part of it.

In the present case we have involved, not a new product, but one which has been made according to the same standard, and sold and consumed under the same name for more than twenty years. To eliminate the caffeine from this product, and still call it "Coca-Cola" would be to practice a fraud, certainly on every person who was accustomed to purchase and consume the product made in accordance with its formula; and to say that "Coca-Cola" is adulterated, that is, that it is made counterfeit, or not genuine, by the presence in it of this essential constituent, would be a perversion of

the well-recognized meaning of the term "adulterated" of which Congress should not be convicted except on exceedingly strong evidence. We submit therefore (a), that caffeine is not an added ingredient in Coca-Cola within any reasonable definition of the word "added"; and (b), that its presence does not constitute an adulteration in Coca-Cola, within the proper meaning of the term "adulteration." In order to sustain the libel, it was incumbent on the government to show **both** that caffeine was an added ingredient, **and also** that it was an adulteration.

2. We have been able to find very little authority shedding any light on the question under consideration. In the case of United States vs. 1950 Boxes of Macaroni, 181 Fed. Rep., 427, the proof showed that the **normal** constituents of macaroni are flour and water, and that "to change **its natural** color and make it more inviting" Martius yellow **was added**; that this coloring matter is not an **ingredient** of macaroni, serves no other purpose than to change its color, and is a poison which will kill." The Court held that as the coloring matter was a poisonous substance **wholly foreign** to the food product" and was **added** to it "solely to mislead and deceive" its presence was an adulteration within the meaning of the law.

In the case of **Commonwealth vs. Kevin,** 202 Pa. St., 23, 29, the Court had under consideration a statute of Pennsylvania passed "to prevent the adulteration of food," which provided among other things that food was adulterated "if it contain an added substance or ingredient which is poisonous or injurious to health." The Court said of this Act:

> "It does not prohibit the admixture of pure articles as a food nor prohibit **the addition** of a healthful ingredient as a food preservative. It is directed against the introduction into a food product of **a substance foreign to it**, and of a poisonous or injurious nature."

In **Hall-Baker Grain Co. vs. United States**, 198 Fed. Rep., 614, 616, it was said that the "sole purpose" of the Food and Drugs Act was, (1) to protect purchasers from injurious deceits by the sale of inferior for superior articles; and (2) to protect the health of the people by preventing the sale of **normally** wholesome articles to which has been **added** substances poisonous or detrimental to health.

And this Court said:

> "As against adulteration, the statute was intended to protect the public health from possible injury **by adding to articles of food consumption** poisonous and deleterious substances * * *."
>
> **U. S. vs. Lexington Mill & Elevator Co.**, 232 U. S., 399.

And again, this Court quoting the construction of the State Supreme Court in construing the Food law of the State of Illinois, said:

> "We think the reasonable construction of the Act to be that the prohibition against boric acid is not limited to foods to which it is an added ingredient, but extends to compounds sold as a food preservative which contain boric acid. The danger to health is as great from one as the other, and the prohibition of both was necessary to effect the evident purpose of the legislation."
>
> **Price vs. People of the State of Illinois**, Oct. Term, 1914.

This case is important here only when we consider the Federal Food Law in contrast with the Illinois Food Law. The Illinois Food Law contains a section indentical with the one here under consideration, and also a provision which declared a compound adulterated which contained any of various ingredients, among others boric acid. As the Supreme Court of Illinois said in construing the Act:

> "The object of the Act is to protect the public health by preventing dealers from selling food to which has been added, for the purpose of preserving it, ingredients injurious to health, or from selling any compound as a preservative which contained any such ingredients."

Clearly, the Illinois Act under its very terms covered both, whether added or not, while the Federal Act only declared adulteration in case of added poisonous or added deleterious ingredients.

See also,

U. S. vs. 11,150 Pounds of Butter, 195 Fed., 657, at p. 661:

These cases seem to sustain us in the contention that the term **added** ingredient means something **foreign** to the article to which it is **added,** and that therefore, an ingredient which is a constituent element and is not foreign is not an **added** one.

See also,

Weeks vs. U. S., 224 Fed., 64, 67,
Curtice Bros. Co. vs. Barnard, 209 Fed., 591, 594.

We have carefully examined all of the American cases on this subject, and a good many of the English ones, but with the exception of one case, we have

found none brought under this Section where the facts did not show a completed article and some ingredient added to that---a standard and an addition thereto. The single exception is the case of **U. S. vs. Mayfield,** 177 Fed., 765; and in that case the significance of the word "added" was evidently not called to the attention of the Court, and was obviously overlooked.

(3) The debates in Congress on the consideration of the Food and Drugs Act, and the explanation of the different provisions by members of the committee, were referred to in the argument of the case in the Court below, and the trial judge ruled, without objection from either side, that he would permit counsel to refer to the reports of the Committees on the bill, and the statements made by the Chairman of the two Committees with reference to the purposes of the bill.

(Record, p. 1834.)

The Food and Drugs Act originated in the House of Representatives, and the Chairman of the Committee by which the bill was drafted and presented to the house was Mr. Mann, of Illinois. He had occasion, repeatedly, to explain the general scope and purpose of the bill, as well as the meaning of particular provisions contained in it, and he was always very clear and emphatic in his declarations that the law was not intended to prescribe or limit the diet of the public, but only to protect it against fraud and imposition. In the Congressional Record for June 21st, 1906, p. 8891, discussing certain antagonistic views which had been urged on the committee as to the proper standard for whiskey, Mr. Mann said:

> "We did not recommend and have not recommended a proposition upon that point as either

side requested, thinking it was not the duty of the committee to recommend to Congress legislation **which would determine what people should eat or drink,** but rather to recommend legislation, **which would permit people to know** what they are eating or drinking."

Again, on the same day Mr. Mann said:

"We cannot undertake to prevent the man who is an opium fiend from obtaining opium, but we can undertake to prevent the man **who never wishes to take opium from taking it without knowing** that he is taking it."

Cong. Rec., p. 8892.

And again, he said on the same day:

"There are a great number of so-called cereal foods. It is impossible to ascertain much about the contents, unless there is some method provided. It is true people can buy them or not buy them, as they please. It is also true that people must eat, and hence, must buy some articles of food. Now, I do not wish to say **that people shall not put up such food as they please, or buy such food as they please.**"

Cong. Rec., p. 8900.

The Chairman of the Senate Committee in charge of the bill was Mr. Heyburn of Idaho, and his statements, in the main, seem to conform to and sustain Mr. Mann's views. Thus in the Congressional Record, of February 21st, 1906, p. 2750, discussing the force and effect of the word "added," as used in the Act, he says it is "merely a definition"; that the word "adulterate" means "to degrade; to lessen the character of the thing by mixing with it something of a lesser value of a degraded character"; that when the Act

says that the mingling of an added poison with the thing itself would constitute an adulteration, it states what would probably be true in any event, namely, that "if you add to the venom of the article itself for destructive purposes, or the capacity of it to injure those who use it," you have adulterated it. He then continues:

> "That is the object of introducing the word "added because there are many legitimate substances in commerce that contain in their natural condition certain percentages of deleterious substances, poisonous in whole or in part, and this is intended simply to provide that if you add to those substances, no matter what the degree of deleteriousness may be, **you have degraded the article** to the extent that you have added other poisonous substances to it. That is what it means. It is merely a definition."
>
> Cong. Rec., (p. 2750), Feb. 21, 1906.

And later on, in response to an inquiry from Mr. Spooner as to what the word "added" would mean as applied to whiskey, Mr. Heyburn replied:

> "**Added to the liquor.** I have just stated that **it had been determined through long years of experience what constitutes liquor.**"
>
> Cong. Rec., (p. 2752) Feb. 21, 1906.

And again, Mr. Spooner, not being satisfied as to the proper signification of the word, "added," said:

> "That does not touch the point. Added to what?"
>
> "Mr. Heyburn: **Added to the substance, whatever it be.**"
>
> Cong. Rec., (p. 2755) Feb. 21, 1906.

And while discussing the debates in Congress, it is well to refer to the quotation from the legislative history as is shown in the brief of the Government, and to do this, it is well to point out that there is a difference between the bill as it appeared in the Senate and the bill as it appeared in the House. The bill in the Senate, so far as it relates to the question under discussion, to-wit; the adulteration, contained two clauses, the first one being,

> (1) "In the case of liquors, an article shall be deemed adulterated if it contain any added ingredient of a poisonous or deleterious character."

There was also, in the Senate bill a clause that related to foods, which read as follows:

> (2) "If it contain any added poisonous or **other ingredient** which may render such article injurious to human health."

We find that neither of the above clauses appear in the bill as passed.

The latter quotation is found in the **Congressional Record, of January 10, 1906, page 897 and Feb. 20, 1906, p. 2729**; and the first quotation in the **Congressional Record of February 19, 1906, page 2647.**

It is also, well to call the Court's Attention to an amendment that was offered just before the Senate passed the bill that was before it. The amendment read as follows, and is found in **Vol. 40 of the Congressional Record, page 2772,** and this amendment was rejected. It was as follows:

> "If it contain any substance or ingredient, whether added, or otherwise, * * * which will injure health."

Now, taking up the quotations from Senator Heyburn, as quoted in the Government's brief **(40 Cong. Rec., Part I, p. 894)**, Senator Heyburn was discussing the proposed bill as it appeared before the Senate, to-wit:

> "If it contain any added poisonous or other ingredient * * * ."

This is entirely different from the clause in the bill, as passed.

Also, **(40 Cong. Rec. p. 2647)**, the discussion then under consideration was in regard to that part of the bill which was before the Senate, above quoted, and which referred to liquors.

The same is true in regard to that quotation in the Government's brief from **40 Cong. Rec.**, p. 2750.

The quotation from **40 Cong. Rec.**, part 3, p. 2758 is in regard to the above portion of the bill that was before the Senate in regard to foods, and which was not passed.

If we compare the bill as finally passed with the bill that was before the Senate, a radical change is noted, and one that bears out the contention that we make in this case.

While we do not believe that it is necessary, in order to ascertain the scope and purpose of this Act, to go to the legislative history, if we must go to it we believe that it will show conclusively that Congress did not intend this Act to cover the purpose and scope that the Government would give the particular section involved.

Since about 1890 Food and Drugs Acts have been introduced in Congress. We have tabulated herein

some of those introduced since 1900. Congress had these Bills before them. As we have seen, these Bills did not confine themeslves to "added" but provided for "any ingredient". Bill S. 88 was before the Senate in Jan. 1906. Let us see what that Bill provided. It had two sections in it that should be compared to the Section of the present Act, to-wit:

> (1) "In the case of liquors, an article shall be deemed adulterated if it contain any added ingredient of a poisonous or deleterious character."
>
> Cong. Rec., Feb. 19, 1906, p. 2647.

Now this particular section was debated and the word "added" came up for most serious consideration. Senator Heyburn taking the position that it was placed in the proposed Bill to protect nature's poisons---Senator Lodge took the position that it allowed a man to put it (poison) in the original manufacture, and punishes the man who adds it. Senator Spooner took the position that it must be added to something, therefore what is the standard? This discussion, however, was finally narrowed down to a controversy between straight and blended whiskey. It was conclusively shown that this section would not prevent the sale of articles that contained poisons, but would simply prevent "adding". Now in order to prevent the sale of liquors that did contain poisons and at the same time protect nature's poisons, an amendment was introduced as follows:

> "In the case of liquors, an article shall be deemed to be adulterated if it contains any added ingredient of a poisonous or deleterious character not inherent in such liquor."
>
> Cong. Rec., Feb. 21, 1906, p. 2754.

But this was rejected on the ground that it still allowed poisonous and deleterious ingredients, so long as they were not added. Senator Heyburn was evidently impressed with the idea that under the above section that was so, for we find the following between Senator Lodge and Senator Heyburn. Senator Lodge said:

> "It seems to me with the word added in there the difficulty is: the liquor could be filled with any amount of poisonous substances if it is in the original manufacture, and you cannot get at it, because the substance has to be 'added' in order to come within the condemnation of this proposed law."
>
> "Senator Heyburn: That comes under another provision.
>
> Cong. Rec., Feb. 21, 1906, 6. 2749.
>
> "Again, Senator Penrose said: But how would it reach the case of straight whiskey in which the fusel-oil was inherent and had not been eliminated by age * * *? How would this amendment (the one which stated "not inherent in liquor") reach the case where fusel-oil has not been added, but is inherent in the whiskey?
>
> "Senator Heyburn: It does not reach it at all, but there are other provisions in this bill that do.
>
> "Senator Penrose: Will the Senator point out to me * * * what part of this Bill will reach that case?
>
> "Senator Heyburn: **The provision that prohibits the sale or commerce in any article that is deleterious to human health.**"
>
> Cong. Rec., Feb. 21, 1906, p. 2750.

Now it must be apparent that the foregoing section in the Senate Bill as originally proposed is practically the same as the section under discussion in

the Act as passed, except that the proposed section refers only to liquor.

It also must be apparent that Senator Heyburn assented to the criticism of Senator Lodge, and had to refer to another portion of the Act in order to cover the situation as outlined by Senator Lodge.

The other part is: (2)

> "If it contained any added poisonous or other ingredient which may render the article injurious to human health."
>
> Cong. Rec., Jan. 10, 1906, p. 897.

Of course Senator Heyburn was correct in his discussion of this section, and this is the section he was discussing. With these two sections the Bill (S88) passed the Senate. But at about the same time the House was discussing a Food and Drugs Act. They had before them a Bill which contained only one section that referred to the one under discussion, to-wit:

> "If it contain any added poisonous or deleterious ingredient which may render the article injurious to health."
>
> Report No. 2118, March 7, 1906, 59th Congress, 1st session, p. 2.

Now the House had before it the former Bills (since 1890). The House would not pass the Senate Bill and substituted the Hepburn Bill as perfected. Mr. Mann from the Committee reported:

> "As the principal purpose of the Bill is to prevent interstate and foreign commerce in adulterated or falsely branded articles of food, drink and medicine; again, 'the purpose of the pending measure is not to compel people to consume par-

ticular kinds of food'; again, 'it is not to compel manufacturers to produce particular kinds of grades of food'; again, 'One of the principal objects of the Bill is to prohibit in the manufacture of goods * * * * the addition of foreign substances, poisonous or deleterious to health."

Report No. 2118, March 7, 1906, 59th Congress, 1st session, pp. 3, 6.

The Hepburn Bill as perfected had only one section that related to the Section under discussion as follows:

"If it contain any added poisonous or other added deleterious ingredient, which may render such article injurious to health."

Same Report, p. 11.

And this Section was made the law, and it is radically different from the section that Senator Heyburn was citing in his discussion with Senator Lodge, showing as we think most conclusively that Congress only intended to prevent additions to the standard, and showing further that Congress did not intend to make the scope and purpose of this Act as broad as the Government contends for. This must be plain, for the liquor section is practically the same as the Act as passed (except as passed it referred to foods) and under the liquor section poisons could be used in the manufacture, and to this Senator Heyburn agreed, while under the food section as proposed this could not be done, and this proposed section prevented more than did the liquor section. It's limitations were broader, and Senator Heyburn agreed. And this proposed section was the same as the proposed section in former Bills, but different from the bill as passed.

Senator McCumber on Feb. 20, 1906, p. 2731, stated:

> "We differentiate between adulteration and misbranding. Adulterations are intended to cover those cases where you change the quality of the particular thing by additions, etc., and misbranding is where you give to a food article a name entirely different from its own."

Senator Heyburn in discussing the liquor section did frequently say that the word "add" was placed in the section to protect nature's poisons and in giving illustrations cited simple foods. But when Senator Penrose called his attention to the fact that this section was protecting straight whiskey, Senator Heyburn replied another section would take care of that. Senator Heyburn was just a bit inconsistent. However, his desire was to protect nature's poisons---that was his prime object in discussing the bill. He says that the word "added" did it in the liquor section. But in illustrating the object of "added" in this section he cited simple foods that had poisons in them. Foods evidently were not considered as coming under this Section, for there was another section referring to foods. Now the object of the Act under the proposed bill was to protect "nature's poisons"---Senator Heyburn said so---and we agree that it did. But the food section under this bill did not have "added" in it before ingredient. (If it contain any added poisonous or **other ingredient** which may render the article injurious to the health of the person consuming it.) If Senator Heyburn was correct in the object, then "added" evidently was not needed to carry it out. The phrase "which may render the article injurious to health" did that. It is certain that it would pro-

tect such articles as were cited as illustrations. And if it didn't and further if this is a health statute, why protect? But the desire was to protect "nature's poisons"; this proposed act Senator Heyburn contended did. Therefore, when the word "added" appears in the present statute it is not accounted for by the claim that it was put in to protect "nature's poisons". And so we say that "added" under the present Act was put in for a purpose other than to protect "nature's" poisons." They would have been protected if the Act had read, if it contain any poisonous or other deleterious ingredient which may render the article injurious to health. For as this court decided in **U. S. vs. Lexington Mill & Elevator Co.**, the question is, does the ingredient render the article injurious to health? Certainly the oil in the grain does not so render the grain, nor does the acid in the peach, nor does the caffeine in the coffee and tea.

It will be interesting to notice some of the different bills that have been introduced in Congress pertaining to foods and drugs. These bills which we will discuss were introduced prior to the passage of the present act, and we have undertaken to parellel a section from each of these bills, including in the parallel columns, the present act. Of course, the entire bills are not quoted, but only that portion of each which resembles, or relates to the part of the present act which is under discussion. It is true, that these can only be persuasive, but nevertheless, it shows the true intent of Congress.

Herewith we present the parallel columns showing the number of the bills, when and where introduced, and by whom introduced:

(1).

(S 1—Report No. 914,
Introduced by Mr. Paddock,
52nd Congress, 1st Session.)

"If it contain any added poisonous ingredient or any ingredients which may render such article injurious to the health of the person consuming it."

(4).

(H. R. 12,348—3-4-1902.
Introduced by Mr. Corliss
57th Congress, 1st Session.

"That any article of food or drink or any article or compound intended to become an ingredient in a composition or preparation for food or drink, containing substance or substances which are, in the quantity used, or intended to be used, deleterious to health * *."

(3).

(H. R. 9353—1-18-1902,
Introduced by Mr. Mann,
57th Congress, 1st Session.

(Same as H. R. 12,348.)

(7).

(H. R. 6295—12-8-1903,
Introduced by Mr. Hepburn
58th Congress, 2nd Session.)

"If it contain any added poisonous ingredient which may render such article injurious to health."

(5).

(H. R. 3109—12-20-1902.

Introduced in the Senate
by Mr. McCumber.)

"If it contain any added poisonous ingredient or any ingredient which may render such article injurious to the health of the person consuming it."

(6).

(S 198—11-11-1903,

Introduced by Mr. McCumber.)

"If it contain any added poisonous ingredient or any ingredient which may render such article injurious to the health of the person consuming it."

(2).

(H. R. 9677—3-16-1900.

Introduced by Mr. Hepburn.)

"If it contain any added poisonous ingredient, or any ingredient or ingredients, which may render the article injurious to the health of the person consuming it."

(8).

(S—88—The Act as
Passed):

"If it contain any added poisonous, or other added deleterious ingredient which may render the article injurious to health."

The contention of the Government is, that this is a statute, among other things, for the protection of the public health.

Column 1 shows the bill introduced by Mr. Paddock. It must be noted that this bill provides against adulteration, "if it contains any added poisonous ingredient". If the bill had stopped there, insofar as "poisonous" is concerned, we would have had the same bill, in part, as was passed; but the Paddock bill goes on further to say, "or any ingredients which may render such article injurious to the health of the person consuming it". The word "added" is not repeated, as it is repeated in the present Act, before "ingredients", which to our mind, shows conclusively that the bill shown in Column 1 was intended to reach **any** ingredient, whether "added" or not, that would render the article injurious to the health of the person consuming it. It shows a bill that would have covered the contentions made in the present case, both by the Government and the claimant, but it differs from the present bill. The word "added" in the bill shown in Column 1 does not qualify "ingredients".

From Column 2 (the bill introduced by Mr. Hepburn), we draw the same conclusion as is drawn from the bill shown in Column 1. The word "added" is used to qualify "ingredient" in the first part of the bill shown in Column 2, but the bill in Column 2 goes further, and covers "any ingredient, or ingredients which may render the article injurious to the health of the person consuming it." The qualifying word "added" is omitted before "ingredient" or "ingredients" in the second part thereof.

The bill shown in Column 3 is an exact duplicate of

the bill shown in Column 4, and of course, the same argument would apply.

We now come to the bill shown in Column 4. The bill leaves out the word "added" entirely, and therein differs from the Act as passed, and provides, "That any article of food or drink or any article or compound intended to become an ingredient in a composition or preparation for food or drink containing substance or substances which in the quantity used, or intended to be used, is deleterious to health." This is clearly the bill that would cover the contention made by the Government in the present case, but is radically different from the bill as passed, and it shows a clear intention on the part of Congress to differentiate between the contention made by the Government in this case, under the present act, and the contention made by the claimant.

Column 5 shows a bill which is not materially different, insofar as this discussion is concerned, from the bills shown in columns 1 and 2, and again, it provides for any ingredient,---not an **added** ingredient, but **any** ingredient which may render such article injurious to the health of the person consuming it. It also, differs from the act as passed, insofar as it does not again employ the word "added", as does the present bill.

Column 6 shows a bill which is practically indentical with the bill shown in Column 5.

As to the bill shown in Column 7, we note decided changes therein. In the first place, the qualifying phrase, "which may render such article injurious to health" is changed, inasmuch as it leaves off the following: "of the person consuming it", and it does not

refer to any ingredient at all except "poisonous ingredients", and before the word "poisonous" it has "added."

None of the bills noted (except No. 3 and 4), in the above columns contain the word "deleterious."

Now we come to the present bill. What changes do we find? We find in the present bill, as follows: "if it contain any added poisonous", and, up to that point, it is the same as the clause contained in the bills shown in Columns 1, 2, 5, 6 and 7. The bill, as passed, however, proceeds as follows: "* * * or other added deleterious ingredient." This phrase does not appear in a single one of the bills as shown in the foregoing parallel columns. Not one of them contain the repetition of the word "added", and not one of them contain "deleterious," (except No. 3 and 4). The present bill, as passed, contains the phrase "which may render the article injurious to health". This phrase appears also in the bill shown in Column 7. In Columns 1, 2, 5, and 6, the phrase is as follows: "which may render such article injurious to the health of the person consuming it."

However, insofar as this discussion is concerned, the radical difference is that in the present bill, the word "added" is repeated, and in the other bills this word is not repeated. Now, there must be some reason for this distinction, for it would have been unnecessary to have repeated the word "added" in the present bill if it meant the same without the word "added".

The placing of the word "deleterious" in the present bill is also significant. If, as in all the other bills (except those shown in Columns 3, 4 and 8), it read

"ingredient," leaving out the word "deleterious," any ingredient would have been barred if it had rendered the article injurious to the health of the person consuming it, whether deleterious or not.

To summarize: Under the bills shown in columns 1, 5, 6 and 2 above, it would be necessary to prove the following:

(1) That there was an added ingredient, and that it was a poisonous ingredient, and being an added poisonous ingredient, it was one which may render such article injurious to the health of the person consuming it; or,

(2) That it contains an ingredient which may render such article injurious to the health of the person consuming it.

Under the bills shown in columns 3 and 4, it would not be necessary to prove that the ingredient was added, or that it was poisonous or deleterious. It was only necessary to prove that the article contained a substance or substances which, in the quantity used, or intended to be used, was deleterious to health.

Under the bill shown in column 7 it would be necessary to prove that there was a poisonous ingredient, and that the poisonous ingredient was an added one; and that the added poisonous ingredient "may render such article injurious to health".

Under the present Act, the following steps must be taken:

(1) You must prove that there is an added ingredient;

(2) That this added ingredient is either poisonous or deleterious; and

(3) That it may render the article injurious to health.

By a careful examination of the above summary, it must be noted that it is necessary to prove far more under the present Act (which is here given as No. 8), than it would have been to prove under the acts here given as Nos. 1, 2, 3, 4, 5 and 6.

Columns 1, 2, 5, 6.

It would be necessary to prove:

(1) Added ingredient;
(2) Poisonous;
(3) Rendering article injurious to the health of person consuming it.

or

(1) Any ingredient so rendering the article.

Columns 3 and 4.

It would be necessary to prove:

(1) Containing substance in quantity used deleterious to health.

Column 7

It would be necessary to prove:

(1) Added ingredient,
(2) Poisonous,
(3) Rendering article injurious to health of person consuming it.

Column 8

It would be necessary to prove:

(1) Added ingredient,
(2) Poisonous,
(3) Rendering the article injurious to health.

or,

(1) Added ingredient,
(2) Deleterious,
(3) Rendering the article injurious to health.

This clearly, to our mind, shows that Congress did not intend to condemn any article having a deleterious ingredient in it, even though it may have rendered the

article injurious to health. It was necessary to prove, further, that that deleterious ingredient was **added.**

(1) Reverting now to the contention heretofore made, that everything which enters into the composition of a compound article of food is an added ingredient, within the meaning of the law, and that Coca-Cola is a compound, and that therefore, the caffeine in it is an **added** ingredient, we reply:

(a) In the first place, it must be conceded that there is nothing in the language of the Act to affirmatively sustain this contention. There is no hint or intimation that all ingredients in a compound are considered as "added", or that the qualifying word "added" was intended to apply only to simple foods.

(b) In the second place, the mere reading of the Act itself would seem to affirmatively demonstrate the fallacy of this contention. The term "food" as defined in Section 6, includes "all articles used for food, drink," etc., "whether simple, mixed, or compound." Section 7 provides that "for the purposes of this Act an article shall be deemed to be adulterated * * * * In the case of food * * * * * If it contain any added poisonous or other added deleterious ingredient," etc. It is submitted that the term "food" as used in Section 7 must be taken to correspond with its definition as given in Section 6, and that reading this definition into Section 7, the clear meaning and interpretation of the provision above quoted from section 7 is that any article used for food, drink, etc., whether simple, mixed or compound, shall be deemed to be adulterated if it contain any **added** poisonous or other **added** deleterious ingredient. In other words,

the provision is directed against **added ingredients only,** with respect to mixed and compound articles of food, as well as **simple** ones. If Congress had intended as argued by counsel for libellant, to provide that any mixed or compound article of food should be deemed to be adulterated if it contained **any poisonous or deleterious ingredient,** it would no doubt have said so; but it is respectfully submitted that is not the provision which was in fact made.

(c) Furthermore, the use of the term "ingredient" would seem to indicate that Congress had in mind **mixed** and **compound** articles of food rather than **simple** ones. The word is not an apt or appropriate one to describe a foreign substance mixed with a simple food product.

For instance, if sand is mixed with sugar, it would not ordinarily be spoken of as an **ingredient** of the sugar, although it would no doubt constitute an adulteration under the provisions that an article of food shall be deemed to be adulterated "if any substance has been mixed and packed with it so as to reduce or lower, or injuriously affect its quality, or strength" and "if any substance has been substituted wholly or in part for the article." On the other hand, the term "ingredient" naturally suggests, and properly **means,** one of two or more substances, entering into the composition of a **mixed or compound** article and an **added** ingredient would therefore mean some additional and foreign substance incorporated into such a compound, after its regular and normal constituents had been used. So that it would seem that this provision with respect to added ingredients, was intended to apply especially, if not solely, to compound articles of food;

and that therefore the contention that the word "added" was used only to exclude the inference that the Act forbade the sale and transportation of simple articles of food containing inherently and naturally poisonous or deleterious substances, cannot be sustained.

Substance is defined as follows: The material of which anything is made or **constituted.**

Constituted is defined as follows: Serving to form or **compose** as a necessary part---constituting-- as chlorine and sodium are the constituent elements of salt.

Ingredient is defined as follows: A **component** part of any conglomerate.

(d) The second proviso in the fourth clause under the heading "In case of food" in Section 8 of the Act sets forth certain exceptions to or qualifications of the preceding provisions and concludes as follows:

> "**And provided, further,** that nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome **added** ingredient to disclose their trade formulas, except insofar as the provisions of this Act may require to secure freedom from adulteration or misbranding."

A proprietary food must necessarily be something else than a simple or natural article, since no person can acquire a proprietary right in such an article. It must be a mixture or a compound---in other words, an artificial preparation---and therefore it must be conceded that the clause above quoted refers to and includes compounds, mixtures and artificial preparations. But as we have seen it is the contention of counsel for libellant that the term "added ingredient" is used only to exclude those substances which occur

naturally and inherently in **simple** food products, and that as to **manufactured compound** foods, **all** the ingredients are "added" within the meaning of the Act, and therefore the word "added" was never intended to apply to such foods at all. It is needless to argue that the language of the proviso above quoted absolutely controverts this contention, and demonstrates that the word "added" was intended to apply to and qualify compound and manufactured foods as well as simple and natural ones. Again, if all ingredients in a mixture or compound are added, why repeat "added"? And the same would apply in regard to the exception under Section 8.

(2) The next contention was that everything in a mixture or compound is **added** that does not appear in a state of nature. In reply to this we say:

(a) What, under this construction, becomes of the argument that this is a statute for the protection of health? Under their construction, the following would be the result: Under a distinctive name, we could sell a compound composed of sugar, water, vanilla and digitalis, but could not sell a food composed of sugar, water, vanilla and digitalin, (digitalis being the dried leaves of an herb growing in Central and Southern Europe, and digitalin being the active drug extracted therefrom.)

A product could be made and sold containing sugar, water, vanilla and strophanthus, but you could not sell a product composed of sugar, water, vanilla and strophanthin (which is the drug taken from the Strophanthus).

You could sell a product composed of sugar, water, vanilla and the coffee bean, but you could not sell a

product composed of sugar, water, vanilla and caffeine (caffeine being extracted from the coffee bean).

The Act would also permit the sale of an article containing nux vomica, but would prohibit the sale of one containing strychnine (strychnine being a substance extracted from nux vomica).

A product could contain opium, while it could not contain morphine.

What becomes, we ask in all sincerety, of the protection to health construction placed upon this statute? This interpretation of the word "added" obliterates the purpose of the Act as being an act intended to protect the public health. Again, if this is an act to protect public health, why should Congress wish to protect any food, whether it be in a state of nature or not?

It is shown that coffee contains, naturally, caffeine, and that therefore, it is not an added ingredient. It is shown by the record that Coca-Cola is composed of sugar, water, caffeine, etc. It is further shown by the record that coffee as ordinarily served is composed of caffeine to the average extent of 1.89 grains per cup (average result of chemists) .

See record, pp. 880, 981.
Also p. 838.

The record shows plainly that the caffeine content of Coca-Cola as consumed is 1.21 grains per glass.

See record, p. 838.

The record shows that there is no difference between the caffeine in coffee and the caffeine in Coca-Cola.

See record, pp. 360, 361, 362, 428 and 437.

With more of the identical caffeine in coffee than in Coca-Cola,---the same substance that the government

claims is poisonous and deleterious,---with a construction that would allow the use of one and bar the other, again we ask what becomes of the construction that would make this a statute for the protection of health, if we are to abide by the meaning of the word "added" as given by the government?

What becomes of the health interpretation when the Act allows the use in foods of cocaine, heroin, etc., same not appearing in a state of nature, and derivatives never so appearing? This very argument goes to prove the meaning of this sub-section. It is intended to prohibit fraud and deception by **an addition** to an article of an ingredient that renders the article injurious to health. The object, purpose, intent and wording of this statute are all satisfied when it is interpreted to mean that fraud and deception are perpetrated in two ways: (1), By adulteration; (2) By misbranding.

As was held by the Circuit Court of Appeals:

> "Again, it is urged that the true test whether the deleterious ingredient is 'added' is whether this ingredient is in its natural or in an artificial form. This criterion is supposed to find support in statements made during the Congressional debates, and in the well-known fact that many natural articles of food, like fruits, contain elements which in the combination formed by the complete fruit are not materially harmful, but which, when extracted and administered separately, may be injurious. This criterion may often be a useful aid in applying and interpreting the statute, but to apply it as a hard and fast rule where artificially compounded foods are under consideration comes to saying, as in the case before us, that if coffee berries, or tea leaves, or, we take

it, the complete extract of coffee berries or tea leaves, containing the amount of caffeine now in question, were put into the compound in its manufacture, there would be no violation of the law, but that if the caffeine, and that only, which was in these same coffee berries or tea leaves, or in some other natural product, is put into the syrup, the law is broken. Alcohol surely might be considered a 'deleterious ingredient' if caffeine may be; but can we suppose that a compound food would be obnoxious to this law if it contained 5 per cent. of alcohol purchased in the market ready distilled and yet that a compound otherwise the same would be within the approval of the law though it contained 25 per cent. of alcohol distilled from grain during the process of making the compound? There has been much controversy whether 'blended whiskey' could be sold under that name, but it has never been thought to be forbidden merely because its alcohol was an 'added' ingredient. Many wines are 'fortified' by adding alcohol, and these may be obnoxious to the law for other reasons; but if the theory now under consideration is correct, they could not be sold at all, no matter how labeled. This theory must even lead us to say that if a ground or pulverized coffee or a coffee extract is so deficient in caffeine as to be below standard, the law is violated by adding from another source caffeine enough to make the coffee of full normal strength, or to say that it is a vital distinction whether the citric acid compound in any familiar and popular beverage is, at the time of compounding, squeezed from a lemon or poured from a bottle. We cannot follow the argument which brings us to these results. Not only is it without basis in the statute, but it lacks inherent cogency."

United States vs. 40 Barrels and 20 Kegs of Coca-Cola, 215 Fed., Rep., 535 (at p. 541).

(b) It will be observed, furthermore, that the Act does not refer to poisonous or deleterious **substances,** but only to poisonous or deleterious **ingredients** which may render the article injurious to health. If, therefore, the word "added" were omitted the Act would not forbid the use as an ingredient in a compound food product of a natural article of food **containing** a poisonous or deleterious substance, unless **the article itself** was thereby rendered poisonous or deleterious. For instance, apples, peaches, and in fact, practically all fruits, contain deadly poisons; yet it certainly would not be said that such fruits would be poisonous or deleterious ingredients when used in the manufacture of food products, simply because of the poisonous substances contained therein. We submit, therefore, that the word "added" was wholly unnecessary to cover the point suggested.

The language of Senator Heyburn in the discussion of the bill in the Senate, quoted in the brief of opposing counsel, was as already shown used with reference to certain provisions which are not found in the Act as it finally passed, relative to the adulteration of liquors. He explained that the use of the word "added" would negative the contention, with respect to such articles, that the presence of poisons naturally inherent in them, would constitute adulteration. We have no criticism to make of the language used by him; but he was not considering or discussing the application of the Act to **compound foods,** and therefore, his explanation has no bearing on this case.

(c) The interpretation contended for is utterly inconsistent with and contradictory of the proviso in sub-Section 2nd of Section 8, under the heading, "In case of foods," with respect to the statement on the label of the proportion of certain narcotic poisons contained in the article; and it must be conceded at this point, that not one of the poisons stated in said section appears in a state of nature; and besides derivatives are mentioned and it further must be conceded that every one of the substances included in this proviso is a poisonous and deleterious one, and therefore, according to the construction of sub-Section Fifth, Section 7, insisted on by adverse counsel, every one of them would constitute an adulteration when used as an ingredient in an article of food. Yet by Section 8, Congress permits the use of these poisonous substances that do not appear in a state of nature, and derivatives thereof, upon condition that the quantity or proportion thereof in the article be shown on the label, the purpose of the Act being, as explained by Mr. Mann, in language heretofore quoted, not to determine what people should eat or drink, but rather, to permit them to know what they are eating or drinking.

(d) All confectioneries are compounds, as the name implies, and the Act provides that confectionery is adulterated if it contains any ingredient deleterious or detrimental to health. The qualifying word "added" is not used in this connection, and therefore, according to the argument on behalf of libellant, ingredients containing poisonous or deleterious substances in their natural state, would constitute adulteration in confectionery. But the most common substance used in the manufacture of confectionery (except of

course, sugar), is chocolate, which contains not only about .28 per cent of caffeine, but also theobromine, which is an alkaloid closely allied to caffeine in its chemical composition and physiological effect.

(Record, pp. 358, 359, 484, 485, 989.)

And it is very probable that there are very few, if any, ingredients used in the manufacture of either confectionery or foods which do not contain poisonous or deleterious substances in some proportion. But the ingredients themselves would not necessarily be poisonous or deleterious because they contained deleterious or poisonous substances. If, however, any of the ingredients in confectionery are deleterious or detrimental to health, it constitutes an adulteration; whereas, in the case of foods an ingredient must be not only poisonous or deleterious, but also added. We submit, again, that the word "added" manifestly means something; and that the reasonable and proper interpretation of it is that it refers to something which is not a natural or normal constituent of the article in which it is found, but is an addition to it.

(e) It will not be contended that the Food and Drugs Act forbids the sale of pure caffeine, or its use in food compounds if any one desires to so use it. The same is true of opium, cocaine, arsenic, strychnine and any other poison. If, then, any person can buy poisonous and deleterious substances and use them in making foods, why and to what extent should Congress prohibit the manufacture and sale of articles of food in which they are present as ingredients? The answer is found in the language of Mr. Mann already hereinbefore quoted; that while Congress does not intend to say what people shall eat or drink, it

does mean to provide regulations whereby people can know what they are eating or drinking. Therefore, if any one puts into a known and recognized article of food an ingredient which does not belong to it, according to the standard by which it has been known and sold, then if the ingredient is so far poisonous or deleterious that it may render the article injurious to health, it is an adulteration; while on the other hand, if the article contains only those ingredients which are recognized as belonging to it, then it is not adulterated, even though it contains some ingredient which might be classed as poisonous or deleterious. The only exception to this is that as to certain narcotic poisons, which become deterimental by use, the Act requires that the quantity or proportion be stated on the label. The list of substances included in this proviso was thought to include "all those which are habit-forming" or "which in any way become deleterious by their use."

Statement by Mr. Mann, Cong. Rec., June 22, 1906, p. 9000.

Since, therefore, Congress has permitted the use in articles of food of substances which are confessedly habit-forming and deleterious, can it be assumed that it intended to prohibit the use of caffeine, which is admitted to be far less harmful than any of those enumerated in the proviso referred to, and which was and had been for several hundred years prior to the passage of the Act, an ingredient in food articles of almost universal use?

It is interesting to note in this connection that the proviso under consideration originally required a statement on the label of the quantity or proportion

of "opium, cocaine **or other poisonous substance**" contained in the article. After full consideration, however, the words "other poisonous substance" were eliminated because they were thought to be too indefinite and uncertain, and the list of substances now found in the proviso was adopted because it was believed to include all substances which were habit-forming or which might become deleterious by use.

Cong. Rec., June 22, 1906, p. 9000.

It is said in this connection, that the Government does not condemn any food that contains only Nature's poison, placed there in Nature's own combination, but it does condemn all foods into which man puts 'added' or additional poison.

In other words, as applied to this case, the Government does not condemn the use of tea and coffee which are assumed to contain caffeine in "Nature's combination," and in greater quantities than is to be found in Coca-Cola, but it does condemn caffeine when man puts it into an artificial syrup.

It will be found, however, that in the first place, the testimony of every witness on behalf of the Government on this point is an arraignment and denunciation of tea, coffee, and every other article in which caffeine is found; that in the second place, when taken in tea and coffee, caffeine is not taken in its natural combination, but is freed in the roasting or preparation, and many of the other elements with which it was combined by nature are drawn off (Rec. pp. 360-428); and that, in the third place, the effect of caffeine, whether taken in tea, coffee, water or other substances, is admitted by the Government's witnesses to be always the same. (Rec. p. 437).

(3) A final position is now taken concerning the meaning of "added," and as we gather it, it is as follows:

An added ingredient in a mixture or compound is an ingredient that is not present as a normal constituent, of foods of the same general class, in similar quantity and character.

(a) The question then arises, from what do we determine the class? The answer must be, From the evidence. The query is then: What does this evidence show? Only three drinks are mentioned in the record, to-wit, coffee, tea and chocolate, and caffeine is found in all of them, and in the two former in greater quantity than in Coca-Cola, and in the latter in less quantity. No other class is mentioned in the evidence; all three are soft drinks. Therefore, according to this record caffeine is a normal constituent of the class to which Coca-Cola belongs and is not added.

(x) The Government contends that this standard should have been left to the jury. While this might raise a question of the constitutionality of the Act under the authority of the case of Louisville & Nashville R. R. Co. vs. Commonwealth, 99 Ky. 132, still we have no quarrel with the contention.

It has been held:

> "Where there is no standard, the court must fix for itself a standard, based upon the evidence before it."
>
> **Wilson vs. Wilson**, 86 J. P., 175 (1904).

The evidence must be confined to the issues as made by the pleadings--the pleadings clearly set out the standard, to-wit, a product, Coca-Cola, that contains caffeine, and the evidence shows only the same standard.

We contend, therefore, that even if this question was one for the jury, there was no dispute as to this fact, to leave to the jury. The allegations of the libel and the evidence left no dispute of fact. This quite sharply differentiates this case from that of **Washburn vs. United States,** 224 Fed. Rep., 395, (397, 398):

> "It thus appears that the court, in its charge, did not permit the jury to determine, on the first count, of what the article of food known as a macaroon consisted, but charged them as a matter of law that it consisted of cocoanut, and the white of eggs, and that they might find the product adulterated if the glucose, which the respondent admitted the glucose, which the respondent admitted it put into the cakes, reduced or lowered or injuriously affected their quality or strength. The respondent, in view of the evidence, was entitled to have the jury, before reaching a conclusion upon the question of adulteration, determine what a macaroon was. Indeed, it was essential, in view of the theory on which this branch of the case was tried, for them to do so in order to reach a correct result. If the jury found that it consisted of ground almonds, sugar and the white of eggs, the respondent was entitled to be discharged, for there was no evidence that it shipped in interstate commerce macaroons made of almonds, to which glucose was added. Then again, if the jury found that a macaroon consisted of cocoanut, sugar, the white of eggs and glucose, the respondent was entitled to be discharged, for the evidence disclosed that the article which it shipped in interstate commerce was so composed. There was only one contingency presented by the evidence and the allegations of this count on which the respondent could be found guilty, and that was in case the jury found that a macaroon consist-

> ed of cocoanut, sugar, and the white of eggs, and that the respondent, by adding glucose, thereby reduced or lowered, or injuriously affected its quality or strength. This requested instruction should have been given, and the refusal to do was error."

In other words, we contend in this case, that there was no question to leave to the jury.

(b) From the pleadings, as has heretofore been shown, we find a definite standard set out. We are not charged with adulterating a soda-fountain syrup; there is a definite and specific charge of adulterating Coca-Cola by adding caffeine thereto. The pleadings must define the issue.

(x) While it is true that the Act does not set up a standard for food products (and to this extent, it might be construed as being indefinite and uncertain), yet proper pleadings require that a standard be set out, and with this, the Government complied.

> "The Pure Food and Drugs Act, June 30th, 1906, ... is not void for uncertainty and indefiniteness, in that no standard of grade, quality or purity is prescribed, but the determination of the standard is left to the courts, as such objection may be obviated by requiring specific and properly drawn pleadings."
>
> **2nd Headnote, United States vs. 420 Sacks of Flour,** 180 Fed. Rep. 518.

(y) The above thought is most aptly expressed by the learned District Judge as follows, in the case now before this Court:

> "The conclusion thus reached is strengthened by a consideration of the pleadings in this case. In the libel it is alleged that the food product

'Coca-Cola' which it was sought to condemn is adulterated in that it contained an 'added' ingredient, caffeine, which was and is both poisonous and deleterious. Yet the entire proof unquestionably shows that the caffeine contained in the article Coca-Cola is one of its regular, habitual, and essential constituents, and that without its presence, that is, if it were decaffeinized, so to speak, the product would lack one of its essential elements, and fail to produce upon the consumers a characteristic if not the most characteristic effect which is obtained from its use. In short, Coca-Cola without caffeine would not be Coca-Cola as it is known to the public, and would not produce the effect which the Coca-Cola bought by the public under that name produces, and if it were sold as 'Coca-Cola' without containing caffeine, the public buying it under this name would be in fact deceived."

United States vs. Forty Barrels and Twenty Kegs of Coca-Cola, 191 Fed. Rep., 431 (at pp. 437-438).

(c) Suppose there is no class, and suppose an entirely new product is gotten up? What then becomes of the method of determining the class?

(d) The next query is, What evidence is there before this Court that caffeine in similar amount is not and was not an ingredient of soft drinks?

(e) Under the "public health" theory that the Government propounds, how would this definition apply?

(x) The purpose of the word "added" as given by the Government is,

"To prevent a technical construction which might exclude from interstate commerce articles

of food containing in harmless amounts, and in the form found in nature, certain poisonous ingredients characteristic of such foods."

This reason for the use of the word "added" absolutely destroys the purpose that the Government wishes to give to this Act. Why exempt, if this element is poisonous?

(y) And if not so poisonous as to render the article injurious to health, then the word "added" is not necessary to so exempt, for under the Act, it must "render the article injurious to health," and if the ingredient did so render it, then, if this is a health statute, why exempt it? (See discussion in regard necessity of word "added" on pp. 58 et. seq.)

(z) Again, the statute does not refer to **elements**, but **ingredients**. For example, prussic acid is an element of a peach, but it would not be an ingredient of peach preserves.

As an illustration of the Government's theory as to the result that would follow our construction, the case of the **United States vs. Lexington Mill & Elevator Co.**, is cited, and the Government contended that if the flour in that case had been given the distinctive name, "Lexingtonia," that there would have been no violation of the Act.

This is certainly not the construction of the claimant in this case. In the illustration given, we have a standard, flour; to the flour had been added nitrites, and even though there was a distinctive name, if the nitrites were poisonous or deleterious the article would not be saved by its distinctive name.

The illustration "Lexingtonia" is based on a misconception of what is meant by a distinctive name.

The article under consideration is flour---which has a well recognized standard of manufacture, and is composed of well known ingredients. If a manufacturer of flour adds to it a deleterious or poisonous ingredient, which may render it injurious to health, he is guilty of adulteration; and he cannot escape the penalty by merely giving his flour a fancy trade name. The Court would always look through the **form** to the **substance** of the transaction to ascertain whether the article was in fact "a mixture or compound" known as an article of food under its own distinctive name, or whether it is merely a standard article of food to which foreign ingredients have been added.

We agree that there must be a standard. The question is: How must this standard be determined? The adjudicated cases show that the standard is that which usage has made: What does the manufacturer mean; what does the public understand? What does the evidence show, and what standard does the pleading adopt?

We say, that in this case, the standard is Coca-Cola; that Coca-Cola contains caffeine; and the libel admits that the standard is Coca-Cola, and that standard is a product that contains caffeine.

(4) It is said, further, that the construction placed on the Act by the trial judge leaves the manufacturer free to put arsenic, strychnine or any other poison into a food product, and label it as a compound, and then sell and transport it without any interference or liability so far as the Act under consideration is concerned.

We think, as already argued, that it is true that the Act does not, and was not intended to, interfere with

the manufacture, sale or transportation within the United States of poisonous or deleterious foods, unless they were adulterated or misbranded; although no doubt one who would manufacture and sell such would be amenable under some law. It is quite clear at any rate, that under the provisions of sub-Section Second of Section 8, one can use opium, cocaine and the various other poisonous substances therein mentioned in the manufacture of foods if he states on the label the proportion used.

There is nothing "startling" about the proposition that a law does not affect or bear on conditions beyond its scope. There may be many abuses in the manufacture and sale of food and drugs which are not within the purview of the Act in question; but that fact, if it be a fact, is wholly aside from the question. The Act does not purport or attempt to prohibit the sale or shipment in interstate commerce of anything except those articles of food and drugs which are adulterated or misbranded within the definitions of the Act itself; and it cannot be extended to an article not within those definitions merely because it may be conceived that the Act should be broader in scope than it really is.

As was said in the opinion of the Circuit Court of Appeals in this case:

> "We do not overlook the argument that the Act makes no distinction between compounds known at its date and those thereafter devised, and so that the construction which prevents an inherent element from being considered as 'added' leaves the manufacturer at liberty to use any poison he pleases in making up his compound 'food,' provided only he gives to it and sells it under a dis-

tinctive name. This conclusion must, to some extent, be granted, yet it loses most of its apparent force when we remember the real purpose of the Act and observe the express direction of the law that the maker of a proprietary food need not disclose its contents if he states the place of manufacture. It would seem a proper provision that if a proprietary food contains any ingredient fairly subject to be called deleterious, the maker should disclose on the label its presence and its extent. just as is required in numerous specific instances, but we cannot make such a law. On the other hand, it is difficult to suppose that Congress intended absolutely to forbid the use in any compound of any element that a jury might later call 'deleterious;' but it must be one thing or the other. From this point of view, the prohibition is either absolute or nonexistent. The best known habit-forming drugs are selected, and implied permission is given to allow their use in compounding products for sale, provided they are named on the label; but as to the great mass of other food and drug elements which are undoubtedly deleterious if used to excess, there is no provision for naming them on the label. If they are within the definition of 'added deleterious ingredients,' they may never be used under any conditions or in any quantity that may be injurious to health, even though they are described in the largest of letters on the outside of the package. This way of reading the statute would practically greatly impede the progress of synthetic chemistry in foods, and we think it distinctly more unreasonable than it is to suppose that Congress, having selected and regulated the use of those things known to be particularly dangerous, thought best not wholly to forbid at that time other things from which no serious danger need be anticipated."

United States vs. 40 Barrels and 20 Kegs of Coca-Cola, 215 Fed. Rep., 535 (at p. 542).

The inquiry, however, is wholly immaterial so far as this case is concerned. We are not dealing here with an article concocted and put on the market subsequent to the passage of the Food and Drugs Act, but with one the manufacture of which was commenced some twenty years before that law was passed, and which has been manufactured and sold in continually increasing quantities and under the same formula, up to the time of the institution of this suit. To say that such an article is adulterated by the presence in it of a substance which has constituted one of its essential constituents for over twenty years is, we submit, a perversion of the language.

(5) The statement in brief of the adverse counsel, in this connection, that the process of manufacture of this article has not been uniform because prior to 1902 it contained "an appreciable cocaine content," which was afterwards eliminated, does not require more than passing notice. The fact is, as hereinbefore stated, that it was always the purpose of the manufacturer to eliminate all the cocaine and use only the residuum from the coca leaves; that in the trial of a case in 1902, a chemist testified that an analysis he had made disclosed the presence of 1-400 of a grain of cocaine, in an ounce, or 480 grains, of Coca-Cola syrup; and that thereupon the manufacture of the ingredient in which the coca leaves were used was placed in the hands of a chemist who guaranteed to eliminate all trace of cocaine, and has since done so.

(Record pp. 1624-1626; 1688-89).

And the principal witness of libellant admits that the quantity or proportion of cocaine testified to would not, so far as he knows, have any appreciable effect. (Record, pp. 1715, 1716, 1725, 1726, 1727).

If the presence of the substance would not have any appreciable effect, then its elimination would not operate as an appreciable change.

> "Omission of ingredients not essential to its purpose as a food product, is not in violation of the statute. It is open to the manufacturer to improve common articles of food. The food must contain all of the ingredients that are adapted to use as a food product, and if nothing is eliminated except such ingredients as could be dispensed with without injury to the food as a food product, there is no violation of the statute."
>
> **People vs. Jennings,** 94 Northwestern, 216; (132 Mich., 663).

And finally, another change is noted: The difference between the bottled and fountain syrup. It shows a difference in caffeine as follows: In the bottled syrup, it is 1.19 grains to the fluid ounce; and in the fountain syrup, 1.21 grains to the fluid ounce. This was certainly not a change that would upset the formula. The product was not changed. Certainly it was not such a change as would affect the trade mark Coca-Cola. There is again, no charge that we have violated Section 7, (Foods), 3rd. The caffeine in the fountain syrup remains the same, and the change was only to meet the requirements of the bottled product.

(6) It is also argued that the title of the Act indicates that its purpose is to prevent the manufacture, sale or transportation of foods which are **poisonous**

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or deleterious as well as those which are **adulterated or misbranded**; and that therefore if the food product in controversy here was poisonous or deleterious it would fall within the scope and inhibition of the Act, even though it was not adulterated within the proper meaning of that term.

We are unable to see that this argument is of any benefit to the libellant. The act, both in its caption and body, clearly recognizes that there is a distinction between **adulterated** foods, and **poisonous** or **deleterious foods.** It is quite conceivable that a food might be adulterated without being either poisonous or deleterious; and on the other hand, there are many foods which are not adulterated which might be said to be poisonous or deleterious in the sense in which it is contended this product is: as, for instance, coffee, tea, chocolate, whiskey and other intoxicants, etc. The libel in this case is not based on the averment that Coca-Cola is within the inhibition of the Act because, independent of any question of adulteration, it is **in itself** poisonous or deleterious, but upon the ground that it is adulterated; and it would be incumbent on the libellant to sustain this averment, and prove the adulteration, before it would be entitled to a decree on this branch of the case. Therefore, if it were true that the Act itself would prohibit the manufacture, sale or transportation of Coca-Cola if it was poisonous or deleterious, though not adulterated, that would not help the libellant in this case, at least without an amendment of the libel. But as a matter of fact, as hereinbefore shown, the act does not deal with **poisonous** or **deleterious** as distinguished from **adulterated** foods at all, except only in Section 11, which prohibits

the importation into the United States of foods which are either (1) adulterated or misbranded or (2), "otherwise dangerous to the health of the people of the United States." Clearly, therefore, Congress recognized that there are, or may be, foods which are "dangerous to health"---that is, poisonous or deleterious---which are not adulterated; and clearly, also, Congress did not deem it necessary or proper to prohibit the manufacture, sale or transportation of food products which might be considered dangerous to health, but were not adulterated, except only when they were brought in from foreign countries.

It is respectfully submitted, therefore, that the District Judge and the Circuit Court of Appeals were correct in the conclusion that caffeine in Coca-Cola was not an added ingredient, and therefore it did not constitute an adulteration under the provisions of the Food and Drugs Act.

(PART VII.)

IS CAFFEINE A POISONOUS OR DELETERIOUS INGREDIENT?

We do not, however, rest our right to an affirmance of the judgment of the lower court on this point solely on the proposition that the caffeine in the product in controversy is not an **added** ingredient. The motion for peremptory instructions was based on the grounds, (1), that the caffeine was not an **added** ingredient, and (2), that giving the evidence "the strongest possible construction in favor of the government," the caffeine in the product was not "**a poisonous or deleterious** ingredient within the purview of the Pure Food Law, such as would constitute an adulteration in this product, Coca-Cola syrup."

(Record, p. 1812).

The Court sustained this motion on the first ground without passing on or determining the question raised in the second ground.

(Record p. 1894).

The statement in the brief for appellant that the court held that there was such conflict in the evidence as to require the submission to the jury of the question of deleteriousness, if material, is erroneous. The Court said:

> "**Assuming**, for the purpose of determining this motion, that if the caffeine* * * * *is an added ingredient* * * * *there is such conflict in the evidence as to whether it is a deleterious ingredient * * * * *that the question of its qualities and effects should be submitted to the jury the preliminary question arises," &c.
>
> Rec. p. 1894.

As we understand the law, the appellee is entitled to still insist and rely on the second ground of its motion in this court, and if this court is of the opinion that the District Judge erred in the reason on which he based the direction of a verdict in favor of the defendant, but is also of the opinion that the verdict should have been directed for other reasons, the judgment will be affirmed.

A defendant in whose favor a verdict has been rendered by direction of the court is entitled to support such verdict upon any ground which the evidence in the record permits, and of which he has not by his conduct waived the right to himself.

Whitney vs. N. Y. N. H. & H. R. Co., 102 Fed., 850 (Cir. Ct. of Appeals, First Circuit).

When a defeated party has been permitted to present, and has introduced, all the legal evidence which he offered, has rested his case, and the court has instructed the jury to return a verdict against him upon a specified, but untenable ground, its action is error without prejudice and will not warrant a reversal of the judgment, where it is clear beyond doubt from a bill of exceptions which contains all the evidence, that it would not sustain any other verdict.

Bank vs. W. U. T. Co., 141 Fed., 522, 527 (Cir. Ct. of Appeals, Eighth Circuit);

See also:

United States vs. Norton, 107 Fed., 412;
Currier vs. Trustees, 117 Fed., 44; 38 Cyc., L. & P., p. 1592;
Grimes D. G. Co. vs. Malcolm, 164 Fed., 483;
Sullivan vs. Iron Silver Co., 143 U. S., 431.

It is undoubtedly true, and it must be conceded, that under sub-Section Fifth of Section 7, the burden of

proof was on the appellant in this case to prove (1) That caffeine was an added ingredient; (2), That it was a poisonous or deleterious ingredient; (3), That such poisonous and deleterious ingredient may render the article injurious to health.

The case of **United States vs. Lexington Mill & Elevator Co.,** is authority for the third proposition, and it is therein held that the controlling question under the Food and Drugs Act is not whether the ingredient is poisonous or deleterious, but whether this ingredient renders the article injurious to health.

We have endeavored heretofore to show that caffeine under the act, is not an **added** ingredient. We will now endeavor to show that it is not a poisonous or deleterious ingredient, and certainly not a poisonous and deleterious ingredient such as would "render the article injurious to health."

We therefore take up the question:

(PART VIII.)

IS THE CAFFEINE CONTAINED IN THE PRODUCT COCA-COLA, A POISONOUS INGREDIENT, OR A DELETERIOUS INGREDIENT, WHICH MAY RENDER SAID PRODUCT INJURIOUS TO HEALTH, SO AS TO CONSTITUTE AN ADULTERATION OF THE PRODUCT WITHIN THE PURVIEW OF THE FOOD AND DRUGS ACT?

We concede that in discussing this question we must give the evidence the strongest construction of which it is properly susceptible in favor of the apellant, and if there is any material evidence which can properly be construed to sustain the affirmative of the question then it becomes one to be determined by the jury, and the direction of a verdict in favor of the defendant could not be sustained on this ground. We concede, also, that there is much **opinion** evidence to sustain an affirmative answer to the question **if the witnesses were correct in their views as to what it takes to constitute a poisonous or a deleterious substance within the meaning of the law.** It is our contention, however, that there is really no conflict in the evidence as to what caffeine is, or how it is used, or the effect it produces; that the question whether it is a poisonous or deleterious substance, the facts not being disputed, is merely one of the proper definition of the terms "poisonous" and "deleterious," as used in the Act, and is

therefore a question of law to be determined by the court; and that when the terms are properly defined and limited as the law intended they should be, there is no material or substantial evidence to justify the inclusion of caffeine within either of them.

The undisputed evidence is that caffeine is a vegetable alkaloid, which is found naturally in the berries of the coffee plant, the leaves of the tea plant, in **Paullinia sorbilis**, a Brazilian plant, in the nut kernels of the Cola tree, in the leaves of the Brazilian holly (**Ilex Paraguayensis**), and other vegetable growths. It is the stimulating principle in the beverages coffee, tea, and mate, and in guarana, which is a paste made from the leaves of **Paullinia sorbilis**. It is also present in small quantities in coca and chocolate, the principal stimulant in which, however, is theobromine, another alkaloid closely allied to caffeine in its chemical constitution and its physiological effects. In one form or another, caffeine containing substances, principally beverages, are consumed in enormous quantities by the human race in every quarter of the globe, and have been for hundreds of years. The world's consumption of coffee during the season of 1909-1910 was over 2,300,000,000 pounds, containing about 1.3 per cent. of caffeine; the consumption of tea during the same period was about 1,200,000,000 pounds, containing about 2.75 per cent. of caffeine; and the consumption of mate, or Paraguayan tea, made from the leaves of the Brazilian holly, 110,000,000 pounds, containing about 1.25 per cent. of caffeine.

See testimony John F. Queeny, Record, p. 1064.

There is evidence that: caffeine acts on the human system as a nerve, brain and muscle stimulant. If

used to excess, its effects would undoubtedly be injurious to any person; and if used at all by infants and very small children, or persons suffering with certain kinds of disorders, especially those affecting the nervous system, its effects **might** be injurious. On the other hand, the evidence all indicates that the effects of caffeine, even when taken in excessive quantities, are of a temporary and transitory character, and no witness in the case has ever known or had any direct information of any case of death resulting from the use of caffeine. It is true that on the hearing several of the witnesses on behalf of the libellant testified that a man named Zenetz and another named Allardt had reported in a German periodical some cases of death from the administration of caffeine; while the witnesses on behalf of the appellee contended that the reports did not indicate that in any of these cases the deaths of the patients resulted from caffeine. Conceding that, for the purposes of this hearing, this controversy should be decided in favor of the appellant, it results that two German physicians have **reported** two or three deaths from the misuse of caffeine, and that with the exception of these reports neither the literature nor the wide experience and information of the many eminent experts who testified in this case afforded any instance of death resulting from the administration or use of caffeine. In this respect it is less harmful than common salt, the excessive use of which has frequently resulted in death, as testified by a number of witnesses.

The quantity of caffeine consumed in Coca-Cola, as hereinbefore shown, is about 1.21 grains in an eight-ounce glass as served at fountains, or about 1.19 grains

in an eight-ounce bottle. The quantity of caffeine in a five-ounce cup of ordinary black tea is about 1.54 grains; in an eight-ounce glass of cold tea, about 2.02 grains; in a five-ounce cup of coffee diluted with milk, in the proportion of three-fifths coffee and two-fifths milk, 2.61 grains; and in a two-ounce cup of after-dinner coffee, 1.74 grains.

Testimony J. W. Mallet, Record, p. 838;
See also, Testimony Charles E. Caspari, Record, pp. 879-880;
See also, Testimony John M. McCandless, pp. 978-981.

And it is conceded by the witnesses for the libellant that the physiological effects of caffeine as it exists in tea and coffee are exactly the same as its effects in Coca-Cola.

Record, pp. 360, 361, 362, 428.

It is also shown that caffeine-containing beverages, and especially tea and coffee, are recognized in civilized nations the world over as proper and legitimate articles of diet; that they are furnished as such in public institutions, such as hospitals, asylums, penitentiaries, etc.; and are included as part of the rations furnished by the United States---the libellant in this case---to its soldiers, sailors, prisoners, etc.

The propositions on which it was sought by the testimony of the expert or opinion witnesses examined on behalf of the libellant to establish the contention that the caffeine in Coca-Cola is a poisonous or a deleterious ingredient, "which may render such article injurious to health," were substantially as follows:

1. That caffeine **may** produce injurious results, if taken in excessive quantities, or by children or ner-

vous people; and that therefore, it is an ingredient which, in the language of the Act, **may** render the article in which it appears injurious to health.

2. That caffeine is a **drug**, and being a drug it has no proper place in an article of food, and therefore it constitutes when put into an article of food a poisonous, or at any rate a deleterious, ingredient within the meaning of the Act.

3. That all **stimulants** are deleterious; that caffeine is a stimulant; and therefore caffeine is deleterious.

4. That caffeine is **a habit-forming substance**; and the use of habit-forming substances is necessarily and inevitably injurious.

5. That caffeine contains nothing of food value, and is not a normal constituent of the body; that therefore it is not a proper article of food; and that not being a proper article of food when it is used as such it is deleterious and may injure the health.

It is not denied that the libellant has introduced a number of witnesses whose **opinions** sustain each of these propositions; but on the other hand, we think the same witnesses demonstrate that to apply these propositions to the Food and Drugs Act, and to construe it in conformity to them, would reduce it to an utter absurdity.

1. For instance on the first proposition, it is undoubtedly true that the excessive or improper use of caffeine **may** produce injurious results; but if the Act is to be construed literally, to prohibit as deleterious any substance the use of which **as** a food or **in** a food **may** result injuriously, the human race would be absolutely without food, and would necessarily **starve to**

death. For the libellant's witnesses admit that every substance known or used as food will produce injurious results if taken to excess; and that there is hardly an article of food which may not be injurious to some people, even if taken in moderate quantities. A person whose digestion was out of order could not eat mince pies with impunity;one afflicted with rheumatism might be injured by eating tomatoes, strawberries, or other acid fruits; a person with Bright's disease should not eat sugar or certain kinds of meat; and there are people who are injuriously affected by such common articles of food as eggs and milk. And so if the theories of the libellant's witnesses should be carried to their legitimate conclusions, it is to be held that every food substance is to be branded as deleterious under the Act, the use of which by **any** person, may result in injury; and if on the theory of "once a poison, always a poison," a substance, the use of which in **large** quantities may result injuriously, is to be prohibited as deleterious under the Act in **any** quantity, we repeat the Act will absolutely deprive humanity of the right to eat anything. For there is no substance so wholesome that it will not be injurious to **some** people in **ordinary** quantities, and to **all** people in **excessive** quantities.

We think the true rule for the construction of the Act in this regard is stated in an opinion by Mr. Julius M. Mayer, at the time Attorney-General for the State of New York, which was printed in connection with the discussion of the Food and Drugs Act, as part of the Congressional Record for June 22, 1906, (page 9293), as follows:

> "The police power of the State is exercised to safeguard public health and prevent deception, but that does not mean, where no misrepresentations are held out and no deception is practiced, that a statute can go to the extent of **legislating for the exception rather than for the rule.** In considering foods, (as distinguished from medicines) we must have in mind that **a food is regarded as healthful which can safely be eaten by the mass of the people,** and although sugar, for instance, may be unhealthful or distasteful to some, it is recognized as healthful food for all but the exceptions."

No witness in this case testifies that the health of a normal, healthy person, or the health of the majority of the people who consume them, is injured by the moderate use of caffeine-containing beverages. On the contrary, most of the libellant's own witnesses admit that the majority of people who use them moderately are not apparently injured by them.

Conceding, therefore, that caffeine may produce injurious results if taken in excessive quantities, or by people who should not take it, we say that it is in that respect no different from all other food substances, and that fact does not make it a poisonous or a deleterious substance within the meaning of the law.

2. On the proposition that caffeine is a deleterious ingredient when used in an article of food because it is **a drug**, the libellant's witness get themeselves into an equally untenable position. For a drug as they all practically admit, is any substance which is used as a medicine, or to produce a therapeutic effect; and many substances are used as drugs and also as foods. For instance, sugar, honey, starch, salt, pepper, lico-

rice, ginger, alcohol, and even water are all used as medicines to produce therapeutic effects and are listed in the Pharmacopoeia as drugs; and yet all of them are used much more extensively in foods than as drugs. The record shows that the total amount of caffeine consumed in the United States in the year 1909 was about 18,000,000 pounds, or about 3.80 grains per diem for every man, woman and child on the basis of a population of 90,000,000. The total amount used in the form of drugs was about 90,000 pounds, or about 1-200 of the total consumption; the balance being used in foods. And so while caffeine is listed in the Pharmacopoeia, and is often given as a medicine, its use in articles of food is incomparably more extensive than its use as a drug, and if the Food and Drugs Act prohibits its use as an ingredient in foods because it is a drug, then sugar and honey and salt and all the other substances enumerated above, and a vast number of others, would have to go with it, which of course is absurd.

3. The proposition argued so seriously by a number of these learned experts that all **stimulation** is hurtful and injurious and that because caffeine is a stimulant it is therefore necessarily deleterious and probably poisonous is still more preposterous when followed out to its final analysis. For the witnesses all admit that stimulation is absolutely essential to life; that one cannot move or think or breathe without stimulation; and as stimulation is not in itself deleterious, but is necessary, it follows that the agencies which produce stimulation are, when used properly and not immoderately, direct and valuable aids in the performance of the functions of life. The argument,

of course, is directed against excessive, or immoderate stimulation, which may result in injurious consequences just as excessive or immoderate eating would; and the error into which the witnesses for the libellant have fallen is that they do not distinguish between deleterious **substances**, the direct and primary effect of which is to injure the body and impair its faculties, and deleterious **results** following the **improper** use of legitimate and proper articles of food.

The direct effect of caffeine as testified by libellant's witnesses is to stimulate the brain and heart and muscles and enable them to perform their normal functions better, and to enable the body to utilize more energy than it otherwise would. They contend, however, that this is ultimately deleterious because it involves the expenditure of energy and results in fatigue.

Testimony L. F. Kebler, Record, pp. 314, 315;
Testimony Louis LeRoy, Record, p. 375;
Testimony Wm. F. Boos, Record, pp. 409, 436;
Testimony S. S. Cohen, Record, p. 507;
Testimony Maurice V. Tyrode, Record, p. 528;
Testimony Albert P. Matthews, Record, p. 664.

As the performance of the normal functions is the proper purpose of the organs of the body, and as stimulation of some kind is necessary to enable the organs to perform their normal functions, we submit that it is the veriest sophistry to say that because the performance of the functions involves the expenditure of energy and results in fatigue, therefore a substance which produces stimulation is a deleterious one. The expenditure of energy is not an evil or an injury to the system, neither is fatigue. Both are natural and

necessary incidents in the history of life; and if not carried to excess, and if compensated for by proper food and rest, they are not injurious, but beneficial, to the system, just as it is better that a machine should be operated and should perform its normal functions than that it should rust out in idleness. It must be conceded that the better the organs of the body perform their normal functions the better is its condition, and therefore anything which enables the organs to perform their functions better cannot be said to be deleterious **because of that fact.**

It is submitted that the evidence of the libellant demonstrates that the question **how much** stimulation or **what kind** of stimulation humanity shall use cannot be determined on the theories of experts, or regulated by any fixed rules of law. The questions depend upon the age, health, temperament and personal idiosyncracies of each individual, and more or less also, upon the condition by which he is surrounded. Men are somewhat like horses in this respect; some are so nervous and high-strung that the whip and spur cannot be safely used on them at all; others are so sluggish and inert that they need continual stimulation; and the vast majority are between the two extremes, and need and are benefited by moderate stimulation but should not have too much. For this reason, a law which should undertake to regulate the extent to which the whip or spur should be used on horses, or to abolish their use altogether, would be impracticable; and one which should undertake to prescribe the character or degree of stimulation which mankind should take would be equally so.

And so we most respectfully submit that there is nothing in the Food and Drugs Act to justify the assumption that Congress intended to declare, and nothing in the record to justify a jury in finding, that all substances producing stimulation are poisonous or deleterious when used as ingredients in articles of food.

4. A number of the libellant's witnesses testify that caffeine is, in a measure at least, a habit-forming substance and that therefore it is deleterious. They all admit that caffeine is not in the same class in this respect with opium, morphine, cocaine, etc.; and one of them, Dr. Witherspoon, of Vanderbilt University, admits that he has never considered caffeine a habit-forming drug at all "until I noticed it in this."
(Record, p. 345).

And all the claimant's expert witnesses testify positively and emphatically that caffeine is not a habit-forming substance at all in the sense in which that term is scientifically used and understood, or in any sense except as any other food substance may be said to be habit-forming if one gets accustomed to eating it at certain times; as, for instance, if one should form a custom of eating eggs for breakfast and should follow it so long that nothing else would exactly take their place.

But conceding to the libellant the full force of their testimony on this point, and conceding, therefore, that there is evidence from which the jury might have found that caffeine is in some degree a habit-forming substance; it is certain that the framers of the Food and Drugs Act did not so consider it, and therefore it cannot be so classified in the construction and application of that Act.

We have already called attention to the fact that in Section 8 of the Act a list of substances is set forth, the failure to state on the label the "quantity or proportion" of which in any article of food is declared to constitute the offense of misbranding. The substances included in this list are morphine, opium, cocaine, heroin, alpha, and beta eucaine, chloroform, cannabis, indica, chloral hydrate, and acetanilide, and any derivative or preparation of any such substances. A similar provision is made in the same section as to drugs, the only difference in the two lists being that in the case of drugs alcohol is also included among the substances the quantity or proportion of which is required to be stated on the label. These provisions were inserted in the Act because the substances named **are habit-forming**, and it was deemed proper that the purchasers and consumers of food and drugs should know what "quantity or proportion" of habit-forming substances they were getting; **and the determination was reached, after careful investigation, that this list included all substances that could properly be considered as habit-forming.**

As the bill was originally drawn this clause applied only to drugs, and provided that an article should be deemed to be misbranded "if it fail to bear a statement on the label of the quantity or proportion of any alcohol therein or of any opium, cocaine, **or other poisonous substance**, which may be contained therein." Afterwards, it was changed so as to read as it now appears in the Act; and there was considerable discussion in Congress on the subject of this change and the reasons for it. Mr. Mann explained that the change was made because no one knew what "other poison-

ous substances" would cover; that it would lead "not only to litigation unending, but to a confusion worse confounded," because "the question of a substance being poisonous or not might depend on the quantity which was taken."

Cong. Rec., June 22, 1906, p. 9000 et. seq.

And Mr. Hepburn, another member of the Committee, in the course of the discussion said:

> "Who is to define what is a poison? The dangerous poisons. those that we most frequently come in contact with, are named in this amendment of the committee, and we will have the good result of having them named here."
>
> Ib., p. 8999.

And Mr. Mann, the Chairman of the Committee, said again:

"The reason we did not insert 'other poisonous substances,' as I have said before, is because no one knows what are poisonous substances. It might and would give rise to a great deal of litigation, not about anything that injures anyone at all, but possibly in the prosecution of the law, for the purpose of defining what were the poisonous substances. It could do no good. **We have included by name all those which are habit-forming, as I believe**; at least, I consulted with the distinguished gentleman referred to by the gentleman from New York, Mr. Samuel Hopkins Adams, and have inserted more names of medicines than he could furnish me. I consulted with a member of the National Council of Pharmacists in reference to the same matter. The number has been somewhat enlarged beyond the number of poisons originally given to us by the Bureau of Chemistry, and **I think it includes**

all those which in any way become deleterious by their use."

Ib., p. 9000.

With these explanations the amendment proposed by the committee was adopted and the Act was passed in its present form, the provision being made to apply in practically the same language to foods as well as to drugs.

It thus appears that Congress deliberately reached the conclusion that this list included all substances which were habit-forming or so likely to "become deleterious by their use" that their presence and proportions in articles of food or drugs should be stated on the label; and we submit that experts cannot be permitted to extend the Act so as to absolutely prohibit the use in foods of a substance which Congress did not consider sufficiently deleterious or habit-forming to require its inclusion in this list.

If the contention of the libellant on this point were sustained, it would result in this remarkable situation:---

The really pernicious, habit-forming substances, such as morphine, cocaine, etc., which everyone admits to be poisonous, **may still be used in articles of food,** provided their presence is indicated in the label as prescribed in the Act; while caffeine, which is admitted to be far less deleterious than any of the substances included in the list, if indeed there is any ground to class it as a habit-forming substance at all, **is absolutely prohibited.**

An interpretation of the Act which would lead to such a result certainly should not be favored, to say the least of it; and as it is supported only by the theor-

izing of a few experts, who do not even agree among themselves, it is respectfully submitted that it should not prevail.

5. It is further contended on behalf of the libellant that caffeine is not a **normal constituent** of the body, and contributes nothing toward building up the tissues; that therefore it is not a proper article of food at all; and for that reason, it is a poisonous and deleterious ingredient when put into an article of food, and constitutes an adulteration.

In the first place, there is nothing to justify the assumption that Congress intended by the Act to prohibit the use as food of all substances except those which were normal constituents of the body, or possessed nutriment value. The Act itself defines the term "food" as including all articles **used** for food; and as articles containing caffeine were extensively used as foods at the time the Act was passed, the presumption would seem to be that they were recognized as foods.

In the second place, there are, as the proof shows, many articles of food, recognized to be such, which are not normal constituents of the body, such as pepper, cane sugar, ginger, and various other spices and condiments; and on the other hand, there are substances which are normal constituents of the body, but are unfit for food, and are recognized as poisons within the ordinary meaning of that term, such as arsenic, hydrochloric acid, acetic acid, etc. Therefore the question whether a substance is or is not a normal constituent of the body, is not an accurate or proper test for determining whether it is or is not a poisonous or deleterious ingredient in an article of food.

In the third place, many articles commonly used, and properly classified under the Act as foods, possess no value as nutriments. The Act expressly defines food as including articles used as condiments; and few, if any, condiments possess any value as builders of tissue. And so the Act defines food as including all articles used for drink; and many articles used for drink, especially soda water and other fountain beverages, contain nothing which contributes to the nutrition of the body.

But furthermore, it develops in the testimony of the libellant's own witnesses that the dogmatic assertion that caffeine is not a normal constituent of the body, and contributes nothing in the metabolic processes, is mere theory, without any definite knowledge of the facts on which to base it. Caffeine belongs to the xanthine bodies, being scientifically described as trimethyl xanthine, or a xanthine with three methyl groups attached to it. When taken into the body, it is de-methylated, or broken down into less methylated substances by the splitting off of the methyl groups, and finally it is reduced to simple xanthine; and xanthine, in combination, or substances closely allied to it, are confessedly found in the nucleus, or heart, of every living cell in the body. It is admitted also by the libellant's witnesses that most meats and vegetables contain xanthine, or substances belonging to the same class; and that scientists generally know very little about xanthine, or the part it plays in metabolism.

Testimony, W. F. Boos, Record, pp. 422, 423; 437-439.

So all that the witnesses actually know is that caffeine is a xanthine body, and that xanthine bodies are found in the cells, and also that many of the most common articles of food contain xanthine substances. What the purpose or effect of the xanthine substances in the body may be the witnesses do not know; and the opinion they express, that the xanthines are mere waste products, only produced to be eliminated, is quite as likely to be wrong as it is to be right. Indeed in view of the universal craving of the human race for caffeine and other xanthine bodies, and the vast consumption of them all over the globe, we think we might fairly say that the learned doctors are probably wrong, without knowing it, and that caffeine and xanthine do perform some useful part in the metabolism.

The foregoing is the substance of the arraignment of caffeine as a poisonous or deleterious substance as used in foods. No witness undertakes to testify that it produces any organic or functional change in the human body and there is much affirmative evidence to show that it does not. The burden of the complaint is that it causes the human organism to perform its work so well that it is liable to do more than it ought to and fatigue will result. By the same process of reasoning, it might be argued that a fuel which would enable a boiler to produce more steam or better steam is deleterious because the unwise or excessive use of it might result in wearing the boiler out; or that light produces darkness because when the light goes out it is dark; or that a pleasurable sensation produces unpleasant results because when the sensation is over the feeling is not so agreeable as while it was being

experienced. The argument seems too tenuous and metaphysical for so practical a subject.

The proportion of caffeine **manufactured** to caffeine **consumed** on the basis of the statistics for the year 1909, was about as one to one hundred and twenty; the total quantity manufactured in the United States during the year being about 150,000 pounds, and the total quantity consumed therein being about 18,000,000 pounds. Of the manufactured caffeine, about 90,000 pounds was used in the preparation of drugs and medicines, so that not more than 60,000 pounds could have been used in the manufacture of food products, including Coca-Cola. The remainder of the caffeine consumed, approximately 17,850,000 pounds was taken principaly in the form of tea and coffee. There is no evidence whatever that caffeine is any more deleterious in a manuafctured food than in a natural one; while on the other hand, the affirmative evidence, including the testimony of many of the libellant's own witnesses, is that its effects are identical in all the articles in which it is found. (Record, pp. 361, 362, 360, 428). It further appears that the average caffeine content of coffee is greater than the caffeine content of Coca-Cola. (See Record, pp. 879-880; 979-980-981). Therefore, no reason exists why Congress should have made any distinction in the Food and Drugs Act between manufactured and natural caffeine containing foods; there is no evidence that it had any intention of doing so; and if it had undertaken to make an arbitrary discrimination between the two, the Act would probably be unconstitutional. For if it was attempted to prohibit the use of caffeine in manufactured beverages, while permitting it in tea and coffee, there being no

reason for such discrimination, the manufacturers of, dealers in, and consumers of the manufactured beverages would be denied the equal protection of the laws, and their right to "life, liberty and the pursuit of happiness" would be unwarrantably interfered with.

On the other hand, if caffeine is a poisonous or deleterious substance within the meaning of the Act, both in manufactured and natural foods, then its presence in tea and coffee renders these articles "dangerous to the health of the people," and their importation could, and should, be stopped under Section 11 of the Act. If the representatives of the National Government in charge of the enforcement of the Food and Drugs Act are sincere in their contentions as to the deleterious qualities of caffeine and really desire to prevent the use of it in articles of food, in the interest of the health of the people, they could accomplish much more important results by taking the necessary steps to prevent the further importation of tea and coffee; besides which they would not have to meet the objection that the caffeine is not an "added" ingredient, since that is immaterial if the article sought to be imported is dangerous to the public health.

(PART IX.)

IS THE PRODUCT COCA-COLA MISBRANDED WITHIN THE MEANING OF THE INHIBITION OF THE FOOD AND DRUGS ACT?

The averments of the information, so far as they are now material, on the subject of misbranding are that the name Coca-Cola used on the defendant's label is "a representation of the presence in said food product of the substances Coca and Cola;" that "there are and were substances known as Coca and Cola under their own distinctive names, but said food product Coca-Cola contains no Coca, and little, if any Cola;" and that therefore, said product is, (1), An imitation of the substances Coca and Cola, and (2), Is offered for sale under the distinctive name of said two substances.

(Record, p. 63).

As to the averment that the said food product Coca-Cola "contains little, if any Cola," we beg to call attention to the record as follows:

> "THE COURT: There is one averment of the libel, as I get it, with reference to Cola, merely stating in the alternative that it had little, if any, Cola. That would (not) be an averment of the fact that it contained none, would it? There would be no issue to be submitted?
>
> "MR. MILLER: I do not think there would. I don't think there would be an issue arising on that point.
>
> "THE COURT: Well, eliminate that one matter, within the pleadings now, and later, at the proper time, consider that."
>
> (See Record, p. 68).

From this it seems that the averment that the name is a representation that the food product contained Cola, whereas in fact it contained little if any Cola, does not raise an issue in this case.

The claimant denied that the name Coca-Cola as used on its labels is a representation of the presence in said product of the substances Coca and Cola; it denied that there are such substances known as Coca and Cola, under their own distinctive names, and averred that said product did contain certain elements or substances derived from the coca leaves and cola nuts; it denied that said product was or is an imitation of, or is offered for sale under the distinctive name of, any other article. The answer also averred that Coca-Cola was the distinctive name of said product under which it had been made and sold for more than twenty years as an article of food, and that it was, therefore, not to be deemed adulterated or misbranded, under the provisions of the Food and Drugs Act, the name and place of manufacture being stated on the label.

(Record, pp. 65, 66).

The uncontradicted evidence on the part of the claimant, The Coca-Cola Company, showed, and the court so found on motion for peremptory instructions, that the name Coca-Cola was a trade name, which had for many years been exclusively applied to the product in question, and on which "a copyright was many years ago obtained;" that under this name said product has been extensively advertised and sold, and has become generaly known to the trade and consumers; that no other article of food or beverage has been either manufactured or sold under said name, and that "this

name distinguishes this particular product from all other articles and beverages, clearly identifies it as a particular kind and brand of beverage made by its manufacturer, and distinguishes it from all other beverages or food products manufactured and sold by other persons."

(Record, pp. 1898-99).

It further appears that Coca is a South American shrub, and that Cola (or Kola, as it is frequently spelled) is the name of a tree found in Africa. The leaves of the Coca shrub and the nuts of the Cola tree are the only product of these respective plants which are known commercially. The words "Coca" and "Cola" are used in connection with two medicines, as, for example, fluid extract of Coca, and fluid extract of Cola (Kola). There is no natural affinity or connection between the coca plant and the cola tree; and there is no compound or mixture of them made or sold so far as the record shows, and never has been; they grow in different localities, and there is little if any resemblance between their characteristic or qualities.

Nashville Syrup Co. vs. Coca-Cola Co., 215 Fed., Rep., 527, 528.

The evidence further shows that the name Coca-Cola has twice been registered as a trade mark by claimant, first, in 1892, under the Act of 1881, and subsequently in 1905 under the Act of 1905. The right of the defendant, The Coca-Cola Company, to the exclusive use of the name to designate the particular product in controversy in this case has been established by sundry adjudications in the Federal Courts.

(See Record, pp. 715 to 718).

Recent cases adjudicating the question since the trial of this case in the lower Court are:

The Coca-Cola Co. vs. Deacon Brown Bottling Co., 200 Federal, 105; (decided by Judge Grubb, in the Northern District of Alabama).

The Coca-Cola Co. vs. Nashville Syrup Co., 200 Federal, 153, 157; (decided by Judge Sanford, in the Middle District of Tennessee).

Affirmed by the Circuit Court of Appeals in 215 Fed., 527.

The Coca-Cola Co. vs. American Druggists' Syndicate, 200 Federal, 107; (decided by Judge Lacombe in the District Court for the Southern District of New York).

The Coca-Cola Co. vs. Virginia Syrup Co., (decided by Judge Waddill, in the District Court for the Middle District of Virginia).

The Circuit Court of Appeals for the Sixth Circuit has also, considered the question (but not on the trade mark feature) in the case of **The Coca-Cola Co. vs. The Gay-Ola Company**, 200 Federal, 720.

The libel itself alleges:

That the Coca-Cola Company "has for a number of years past been engaged in, and now is engaged in the manufacture and sale of a **food product known as Coca-Cola.**"

(See Record, p. 16).

And one of the charges in the libel was that "the inferiority of the mixture of the **food product Coca-Cola** was concealed."

(See Record, p. 26).

Counsel for the Government stated to the Court:

"I don't dispute the fact that this substance

has **uniformly been sold as Coca-Cola,** barring the change in formula."

(Record, p. 1875).

Counsel for the Government also stated:

"We don't question that you were entitled to the name."

(Record, p. 716).

The witnesses for the Government stated that the product had been sold for a number of years under this particular name.

(Record, p. 293).

Counsel repeatedly in interrogating witnesses, asked:

"I will ask you to state whether or not you have had any experience with Coca-Cola,---what is generally known and sold as Coca-Cola?"

(Record, p. 372).

And the record shows that since the organization of The Coca-Cola Company, and even before that time, the product has been made and sold under the name Coca-Cola.

(Record, p. 720).

The record further contains the undisputed testimony of more than one hundred consumers, retailers and wholesalers, taken in a number of cities in the United States, by which testimony the extensive use of the name was shown, and by which it was further shown that no other drink, beverage or food product has ever been known by the name "Coca-Cola" except the product of this claimant, and by which its extensive advertising and the extensive use of the name was shown; and by which it was indispu-

tably established that by "Coca-Cola" is meant the product of claimant, and none other.

(See Record, pp. 1280, through 1508).

(1) HOW DOES A DISTINCTIVE NAME ARISE?

(1) "Use."

(2) "Association."

(3) Original Signification.

This record shows beyond dispute that Coca-Cola has been used by the claimant for over twenty years; that it has been associated with this one article for that length of time; that it has been exclusively so used. It is impossible to resist the conclusion that Coca-Cola is a distinctive name; and that it means this particular article as made by this claimant, and nothing else.

This name was registered by claimant under the Act of 1881, and again, under the Act of 1905. While it is true that all distinctive names are not entitled to registration, it is likewise true that no name is entitled to registration unless it is distinctive. It can be distinctive in its original signification, or it may have become so by association.

This Court has repeatedly held:

> "The trade mark must, therefore, be **distinctive** in its original signification, pointing to the origin of the article, or it must have become such by association."
>
> **Canal vs. Clark,** 13 Wall., 311, 323.

And this though has been affirmed by this court.

> **Amoskeag vs. Trainer,** 101 U. S., 51.
> **Lawrence Mfg. Co. vs. Tennessee,** 138 U. S., 537.

A similar thought has also, been expressed by this Court in **United States vs. Steffens**, 100 U. S., 82, as follows:

> "It is sufficient at present to say that they provide for the registration, in the Patent Office, of any device in the nature of a trade mark to which any person has **by usage**, established an exclusive right."

It is true that some of the witnesses on behalf of the Government in the present case testified there was such a substance as Coca and also such a substance as Cola, (applying the two different medicines) but even that does not change the above rule. For this Court has held:

> "Words in common use, with some exceptions, may be adopted, if, at the time of their adoption, they were not employed to designate the same, or like articles of production ..... This may, in many cases, be done by a name, a mark, or a device, well known, but not previously applied to the same article."
>
> **Canal Co. vs. Clark**, 13 Wall., 322.
> **Amoskeag Mfg. Co vs. Trainer**, 101 U. S., 51.
> **United States vs. Steffens**, 100 U. S., 82.

And the use of a compound name does not necessarily, or even generally, indicate that the article to which the name is applied contains the substances whose names make up the compound. Thus, soda water contains no soda; the butternut contains no butter; cream of tartar contains no cream; nor milk of lime any milk. Grape fruit is not the fruit of the grape; nor is bread fruit the fruit of bread; the pineapple is utterly foreign to both the pine and the apple, and the manufactured food known as "grape nuts"

contains neither grapes nor nuts, but is made of dried bread crumbs. This language was quoted approvingly in case of Nashville Syrup Co. vs. Coca-Cola Co., 215 Fed., 527.

Now, this record does not show that the words Coca and Cola were in common use, nor does it show they were known. But the record does show that if they, separately, were known at all, that they applied to drugs, while the name Coca-Cola has always been applied to a food product. The record does overwhelmingly show that this latter use far transcends the former.

> "It is possible to divest a geographical, descriptive, or symbol of its original signification."
> **In re: J. F. Tolle**, 1872 C. D., 219.

Where a name has a well-defined, arbitrary meaning, it should not be refused registration because it appears in dictionaries.

> **Ex Parte, Van Eyck**, 1903 C. D., 43.

Does the trade name over shadow the geographical?

> **Ex Parte, Indiana Bicycle Co.**, 1895 C. D., 66.

If the primary meaning has been transcended by the secondary meaning, it is a distinctive name.

> **Ex Parte, Jewell Bottling Co.**, 1904 C. D., 150.
> **Siegert vs. Gandolfi**, 149 Fed. Rep., 100, 103.

And we take it that if a name has acquired a secondary mean, it has become distinctive. This Court has recognized the secondary meaning theory in the following cases:

> **Jacobs vs. Beecham**, 221 U. S., 263.
> **Elgin National Watch Co., vs. Illinois Watch Case Co.**, 179 U. S., 665.

La Republique Francaise Co. vs. Saratoga Vichy Spring Co., 191 U. S., 427.
Baglein vs. Cusiner, 221 U. S., 580.

And this Court has repeatedly affirmed the doctrine as set out in,

Montgomery vs. Thompson, 8 R. P. C., 361, (L. R., 1891).
Wotherspoon vs. Currie, 5 H. L., 508.
Birmingham Vinegar Co. vs. Powell, (1897) A. C., 710.
Reddaway vs. Banham, 12 R. P. C., 83, and House of Lords Decision, 13 R. P. C., 218.

This brings up for consideration the registration of Coca-Cola under the Act of 1905. The record shows the exclusive use of the name Coca-Cola during the ten-year period in interstate commerce. This is without dispute.

The theory upon which this Act is based has been stated by this Court as follows:

> "Congress evidently had in mind the fact that marks, although not susceptible of exclusive appropriation, at common law, frequently acquire a special significance in connection with particular commodities."
>
> **Davids vs. Davids,** 233 U. S., 461, 466.

And the name Coca-Cola has been upheld under this Act as a valid trade mark in the case of **The Coca-Cola Co. vs. Nashville Syrup Co.,** 215 Fed. Rep., 530, wherein the Court said:

> "The words here involved were, if fairly 'descriptive' at all, not purely descriptive, and by ten years' exclusive use they had become the distinctive appellation of plaintiff's product."

Use under this Act must, of necessity, make a mark distinctive.

The English Courts have gone into this matter in many cases.

We quote from the opinion **In Re Crosfield & Sons,** 26 R. P. C., 846; (79 Ch. Div., 212, 227, 224, 226, 228).

> "It often occurs in trade that by continued user, words get recognized as denoting the goods of a particular firm. These words may, in themselves, be unsuitable to be chosen as trade marks, but they have, in fact, become so..... (856, 857).
>
> "Descriptive names may be distinctive, and **vice versa.**"
>
> "It is apparent that no word can be registered under this paragraph unless it is 'distinctive'—that is to say, is 'adapted to distinguish' the goods of the proprietor from the goods of other persons. There are some words which are incapable of being so 'adapted' such as 'good', 'best', and 'superfine'. They cannot have a secondary meaning as indicating only the goods of the applicant. There are other words which are capable of being so 'adapted', and as to such words the tribunal may be guided by evidence as to the extent to which use has rendered the word distinctive."
>
> (Pages 854-855.)
>
> "Much of the argument before us on the part of the Opponents and the Board of Trade was based on an assumption that there is a natural and innate antagonism between distinctive and descriptive as applied to words, and that if you can show that a word is discriptive you have proved that it cannot be distinctive. To my mind, this is a fallacy. Descriptive names may be dis-

tinctive, and **vice versa.** No class of words are more directly and intentionally distinctive than proper names, and yet originally they were usually, if not invariably, descriptive in all languages. They still are so among savage peoples, and although among civilized nations the original significations of proper names are not remembered or regarded, we see that the natural tendency to use descriptive words as names still exists since nicknames---the only names that are now invented ---are usually descriptive. There is, therefore, no natural or necessary incompatibility between distinctiveness and descriptiveness in the case of words used as trade marks. The notion that there is such an incompatibility is confined to lawyers, and is, in my opinion, due to the influence of the earlier Trademark Acts. By those Acts, which are now repealed, the fact that words were descriptive of the goods was fatal to their registration as Trademarks, and thus becoming, in the eye of the law, distinctive of the goods of a particular maker. But the question whether a word is or is not capable of becoming distinctive of the goods of a particular maker is a question of fact, and is not determined by its being or not being descriptive. The law has never refused to recognize that this is the case, or to give protection to descriptive Trademarks when once duly established in fact, although---except in the case of old marks---they refused registration, and left the owners to obtain protection in another form of action. This is now changed, and under the provisions of the present Act, the Court clearly has power to allow descriptive words to be registered, if a case on the merits is proved before it sufficiently strong to induce it to do so. The language of Section 9, Paragraph 5, puts this beyond doubt, but if any doubt upon the point could remain, it would be set at rest by the lan-

guage of Section 44, which provides that: 'No registration under this Act shall 'interfere with * * * the use by any person of any bona fide description of the character or quality of his goods,' clearly indicating that a registered Trademark may have as its essential part words capable of being used descriptively.

"Having thus established the jurisdiction of the Court to permit the registration of words hava direct reference to the character and quality of the goods, as well as geographical terms, it remains to consider the principles on which this jurisdiction should be exercised. Nothing that I have said must be taken to imply that I consider the effect of Paragraph 5 to be to leave the matter a: large, so that it is indifferent for the purposes of registration whether a word is within the classes specified in 3 and 4 or not. On the contrary, I am of opinion that the fact, that the legislature has required in these cases a preliminary permission to proceed, evidences that it intends the excepted cases to be carefully considered on their merits before they are pronounced to be eligible to obtain the privileges of registration. The tribunal before whom is brought an application to register a word under paragraph 5 is entitled to regard the word as **prima facie** unsuitable by reason of its being outside the specified classes, and it is for the applicant to show that it is proper to be registered. This he may do by arguments based on the word itself and the nature of the goods with respect to which it is sought to be registered, as I have already indicated in the case of geographical terms. The exact issue is formulated in the paragraph, and if the tribunal is of opinion that the nature of the word is such that it is adapted to distinguish those particular goods of the trader from those of other persons it will be its duty---in the absence

of special circumstances---to allow the registration to proceed. But the applicant is not confined to arguments drawn from the word itself. He may support his application, in the case of a mark already in use, by showing that by use the mark has, in fact, become more or less completely identified with the goods by having been continuously used in connection therewith, and the Statute expressly provides that the Court may take this into consideration for the purpose of its decision. To my mind, this provision can bear but one interpretation. It recognizes that distinctiveness---that is, being adapted to distinguish the goods from those of other traders---is not necessarily an innate quality of the word. It may be acquired. There may be cases in which the Court might say, 'The word is descriptive of the goods, and cannot be distinctive solely of your make of of these goods'. The Applicant may (if he can) reply thereto: 'I will show you that it can become distinctive of my make of those goods by showing that it has actually become so either generally or in a particular market'. To use a phrase suggested by Lord Justice Farwell during the argument, the reply is of the type of 'Solvitur ambulando'; 'It can denote my goods because it actually does so'. The extent to which the court will require the proof of this acquired distinctiveness to go will depend on the nature of the case. If the objections to the word itself are not very strong it will act on less proof of acquired distinctiveness than it would require in the case of a word which in itself was open to grave objection. I do not think, for instance, that any amount of evidence of user would induce a Court to permit the registration of ordinary laudatory epithets, such as 'best', 'perfect', etc. On the other hand, in the case of a peculiar collocation of words it might be satisfied with

reasonable proof of acquired distinctiveness, even though the words taken separately might be descriptive words in common use.''

(Pages 857-858.)

See also, **In the Matter of Registered Trademarks**, Nos. 538, 1807 and 158, 839, 32 R. P. C., 40, 50.

Application of **Slazengers, Ld.**, 31 R. P. C., 501, 504.

''Distinctive'' is defined by the English Trade mark Act as follows, (5 Edw., VII Chapt. 15):

> ''For the purposes of this Section distinctive shall mean adapted to distinguish the goods of the proprietor of the trade mark from those of other persons.
>
> ''In determining whether a trade mark is so adapted, the tribunal may in the case of a trade mark in actual use take into consideration the extent to which such user has rendered such trade mark in fact, distinctive for the goods with respect to which it is registered or proposed to be registered.''

Application by Candbury Bros., 32 R. P. C., 9, 13,

Application by Berna Commercial Motors Ld., 32 R. P. C., 113, 118,

Woodward vs. Boulton Macro Co., 32 R. P. C., 173, 198.

And the above cases are interpretations of that Act.

There certainly, then, can be no dispute about the fact that the name Coca-Cola is distinctive, and distinctive only of the goods of claimant.

The case of **United States vs. 30 Cases Purporting to be ''Grenadine Syrup''**, 199 Federal, 932, is particularly interesting and in point in this case.

The claimant in the "Grenadine" case shipped in interstate commerce a compound labeled, "Grenadine syrup," which was composed of sugar, citric and tartaric acid, and the juices of certain fruits. It was held,

> "Since the word 'Grenadine' in its common acceptation does not mean a syrup made from pomegranates, but the term 'grenadine syrup' is used in commerce to designate, not a syrup so made, but a syrup possessing a certain characteristic flavor and color, a purchaser of syrup so labeled was not entitled to expect to receive syrup actually made from pomegranates."

The Government endeavored to prove that there was an adulteration and misbranding by limiting the common acceptation of what was meant by "grenadine syrup" and the court held:

> "If this is the fact, a purchaser relying on the label has the right to expect to get a syrup made with pomegranate juice, and is cheated if he gets a syrup from which such juice is absent. But unless the government has sustained **the burden of proving** that the words of the label carry with them the meaning claimed, according to an understanding so general as to give any purchaser the right to believe that syrup so composed is what he is buying, neither charge has been established." (p. 934.)

The court further on stated:

> "The word is no doubt derived from 'grenade', and among its meanings, in French, as the dictionaries of that language referred to show, is a syrup made of sugar and pomegranate juice. It does not necessarily follow, however, that the same meaning of the word is commonly used and accepted in this country. The question is not one

> to be settled by derivation or by dictionaries, except so far as these may tend to show the meaning of the word in common acceptation here."

In the case of **United States vs. 100 Barrels of Calcium Phosphate** (Notice of Judgment No. 300, Food and Drugs Act), in the District Court for the Northern District of California, the article involved had been originally manufactured and put on the market under the name "Cream Acid Phosphate," which had been subsequently abbreviated to the initials, "C. A. P.," on which a trade mark had been obtained, and under which name the article had been extensively sold for many years. It contained about 50 per cent of corn starch; and the proceeding was instituted on the ground that the article was misbranded because the name created the impression that the article was composed solely of acid phosphate which was not true. The court held, however, that as

> "the arbitrary letters 'C. A. P.' had been applied particularly to the substance or product referred to in the libel for the purpose of distinguishing it from other products * * * the substance referred to is manufactured and sold under the distinctive name of 'C. A. P.'"

and therefore it was not misbranded. If, however, the article had been a new one the name "Cream Acid Phosphate" or initials, "C. A. P." indicating that name, would certainly not be accurately descriptive because 50 per cent of the article **was not acid phosphate** at all.

The same idea is carried out in the opinion by Judge Hough, in the case of **United States vs. Von Bremen** (Notice of Judgment 1949), where the question of salad

oil was under discussion. Judge Hough stated in his opinion as follows:

> "Therefore, of course, the first inquiry is, what does salad oil mean? Now, without any reference to dictionaries (about which a great deal has been said), it seems to me that the evidence adduced here, shows that there was a time not within the memory of some of the younger of us when salad oil meant olive oil, and it did not mean anything else. Therefore, you may assume that the first, original, or **prima facie** meaning of the words 'salad oil' was olive oil.
>
> "But that phrase, like any other, may acquire in time, and be used in a trade, a commercial, a secondary, or a wholly new, meaning, by the public. Now, that is the inquiry for you, viz.: Whether salad oil has acquired a new or secondary meaning."

Even under Regulation 20, it is stated:

> "A distinctive name is a **trade**, arbitrary or fanciful name which clearly distinguishes a food product, material or compound from any other food product, material or compound."

Judge Sanborn, in the case of **United States vs. 300 Cases of Mapleine**, (Notice of Judgment 163), held,

> "A distinctive name is one either so arbitrary or fanciful as to clearly distinguish it from all other things or one which by long use, has come to mean a substance clearly distinguishable by the public from something else."

Judge Hazel, in the case of the **United States vs. Qumpert** (Notice of Judgment, No. 806), held,

> "A distinctive name is one ordinarily used to distinguish it or the article to which it is applied, from all others, or, one which the public might

come to recognize as meaning something different from any other thing."

We contend that the "Mapleine" case (Notice of Judgment No. 163), and as cited by counsel, gives the rule for determining whether a name is distinctive or not. We quote from said case:

> **"A distinctive name is either one so arbitrary or fanciful as to clearly distinguish it from all other things, or one which by common use has come to mean a substance clearly distinguishable by the public from anything else."**

We cannot conceive of a statement of law that would more exactly coincide with the facts as adduced at the trial of this case. We contend that under the undisputed evidence Coca-Cola has by common use come to mean a substance clearly distinguishable by the public from anything else. There is not one scintilla of evidence in this case that denies or refutes the common use and the public understanding of the name Coca-Cola.

We call special attention to the opinion rendered by the Attorney-General of the United States, to-wit, Hon. George W. Wickersham, on October 19th, 1910 (being Food Inspection Decision No. 127), wherein the question involved was whether "Canadian Club Whiskey" was a distinctive name. In the opinion, it is stated by the learned Attorney-General:

> "It is a particular kind and blend of whiskey, made by Hiram Walker & Sons, and is now and has been for years known and sold under the name 'Canadian Club Whiskey.' It is known by that name, and no other to the trade and consumers in the United States and other countries."

It was contended in that case by the Solicitor of the Department of Agriculture, that a distinctive name under the Act meant one that was purely abitrary or fanciful. In reply to that contention, the Attorney-General stated:

> "It seems to me that such a construction * * * is not only unwarranted, but undesirable. The two main purposes which the Pure Food Law was designed to accomplish are: (1) To prevent the sale of adulterated foods; and (2), to prevent deception being practiced on the public. It would seem to me that the latter purpose is more apt to be secured by permitting the sale of a product under its own name, qualified by some distinguishing characterization, than by requiring it to be masked in an anonymity which would give no clue to any of its component elements. But, without entering into an analysis of the many decisions cited in briefs of the respective parties, or further pursuing the discussion of the question, it appears to me clear that the name 'Canadian Club Whiskey' is a distinctive name, so arbitrary and so fanciful as to clearly distinguish it from all other kinds of whiskey or other things, **and a name which by common use has come to mean a substance, clearly distinguishable by the public from anything else.**"

Several English cases directly in point have received consideration involving as they do the English Act.

Lord Redding, speaking for the Court, in the case of **Lemy vs. Watson,** 32 R. P. C., 508 (521), said:

> "I agree with the view put forward by Sir Robert Finlay, and which is founded on the observations of Lord Alverstone in **Rex v. Butcher,** in which he said at the end of his judgment, in dealing with this very Section 18.

'It was that evil to which the Act was directed. What it did was to say that those well known conventional descriptions which had been applied to various classes of goods should be protected. What is intended to be protected under this Section is a trade description, lawfully and generally applied to goods of a particular class, or manufactured by a particular method to indicate the particular class or method of manufacture of such goods.'"

"That is almost in terms stating the words of the statute. He gives it this meaning, that is to say, that the object of that Section was to protect the conventional descriptions, such as 'Brussels carpet,' which is the instance given, and other secondary meanings which have grown up in the course of time and of which instances have been given during the course of the case. I am myself quite satisfied that you cannot have a conventional description or secondary meaning unless those who were parties to it, that is, both sellers and purchasers, agree. There can be no convention which is made by the trade to which the public is not a party. There can be in my view no secondary meaning for the purposes of this Section, to which, again, the public is not a party. I come to the conclusion, therefore, that the Court was wrong when it decided that this trade description had generally been applied before 1887."

Fowler vs. Cripps, 1906, 1 K. B., 21:

Washing soda and Glauber's Salt are both salts of soda in a crystalline form; but the description "Soda Crystals" is by the usage of the trade applied only to the former. The latter was so sold, and the defense contended the truth. The prosecution contended, scientifically, the truth, but not in trade. The answer

of the defense was, that the custom of the trade cannot make that false which apart from the custom is perfectly true.

In the opinion, the court stated:

> "The Act was passed not to ensure scientific accuracy in trade terms, but to protect trade, and to ensure . . . that terms shall not be applied to substances when the application would, according to common acceptation of those terms in the trade, lead the purchaser to assume that he was buying something different from what he really was buying. . . . The fact that a description as applied to particular goods is scientifically correct will not prevent it from being a false trade description. And the converse is equally true. Many trade terms are of very old standing, and it may be that with the advance of science, some of them will become scientifically incorrect, but proof of that will not cause them to be false trade descriptions if they continue to be understood in the trade as indicating the same substances which they did when those terms first came into use."

Rex vs. Butcher, 99 L. T., 622:

Appellant sold British-made cigars, but 83% of tobacco used in the manufacture was imported from Havana. Appellant did not manufacture, nor did he apply the trade description. They were called "La Cuanzo" and "Allegato." On the box was a copy of the Spanish arms, map of Cuba, and pictures of Spanish ladies, but nothing stating that they were British-made. It was contended by the prosecution that the Spanish words and pictures constituted a trade description, which was false (1), as to place where

goods were made or produced, (2), as to mode of manufacturing and producing, and (3), as to material.

The defense contended that for thirty years the ornamentations had been used. Experts were called to show that all cigar boxes were gotten up in this way.

The court held:

> "There is evidence that the trade description was false. Section 18 is to protect one particular trade description which is like a trademark attached to a particular class of goods. What is intended to be protected under this Section is a trade description lawfully and generally applied to goods of a particular class or manufacture by a particular method to indicate the particular class or method of manufacture of such goods. What it did, was to say that these well known conventional descriptions which had been applied to various classes of goods should be protected. (Example, Brussels carpet.) This will be found in the books in connection with a variety of manufactures. Secondary markings applied to names which would be misleading if they were now to be construed for the first time, or even to be construed for the first time after the passing of the Act. That is what the statute meant to protect."

2. Having argued at some length that the name Coca-Cola is misleading and deceptive, and therefore not a legitimate distinctive name, because the product in question contains "no coca and little if any, cola," counsel for libellant then contend that the name would be ineligible as a distinctive name if the product did contain "the substances coca and cola," because in the language of counsel "it is apparent that the only name of a compound which can be its 'own distinctive name' is a name **which is not descriptive** of the ingre-

dients." In other words, if a name **is** descriptive of the ingredients it is not a distinctive name, because it cannot be exclusively appropriated, and if it **is not** descriptive, it is misleading and deceptive and therefore not the distinctive name of the article to which it is applied.

We submit that the name in question here is not subject to criticism on either of the grounds stated. It is not **descriptive** because it does not accurately describe the ingredients of the compound; but it is not **deceptive,** because it does not purport to be and was not intended to be descriptive of the ingredients, and no one understands or believes that the name means or indicates anything except the particular combination of substances to which it is applied. The name is necessarily distinctive because it is not, and never has been, applied to anything except this product, and **no one has the right to apply it to anything else.**

The name involved here is of similar character to the name involved in the case of **Keasby vs. Brooklyn Chemical Works,** 142 N. Y., 467. In that case, the facts were as follows:

In 1881 the plaintiff commenced the manufacture of a secret preparation of caffeine. To this preparation, in order to distinguish it from others and to establish a trademark, plaintiff gave the name "Bromo-Caffeine" which name was printed on the labels affixed to their bottles, and was registered in the Patent Office in compliance with the statute. The plaintiff spent between three and four hundred thousand dollars in advertising this preparation. The preparation contained no bromine, but did contain caffeine

and bromide of potassium "and several other substances." In the year 1890, defendants made a preparation "similar to that of plaintiff's intended for the same purpose" to which they first gave the name "Bromide-Caffeine" and subsequently changed it to the name "Bromo-Caffeine." Plaintiff brought suit to enjoin defendant from the use of the name "Bromo-Caffeine," and it was contended on behalf of defendant that plaintiff could not acquire any exclusive right to the words as a trademark "because, as they allege, the words used for that purpose were in common use at the time of their adoption by plaintiff and it is maintained that they indicate the character, quality and composition of the preparation made by plaintiff, and that they correctly describe an article of trade so that its qualities, ingredients and characteristics would be recognized upon seeing or hearing the words."

It appeared that in 1867 a German chemist made a compound which he called "Bromo-Caffeine," and an account of the making of the compound and the process of making it appeared in a chemical journal and some other publication. That compound, however, was not an article of commerce or generally known, was "useless and valueless and unemployed" and was "a mere curiosity of a chemical and not of a medicinal nature," and differed materially in its composition from plaintiff's preparation.

The opinion of the court was delivered by Judge Peckham, afterwards one of the Justices of the Supreme Court of the United States. He said in part:

> "The trade mark does not impart information as to the general characteristics and composition of the plaintiff's preparation at least to such an

extent as to render the trade mark itself invalid on that ground. It is not descriptive to any such extent as that. The name may and probably would suggest to any intelligent man a suspicion or perhaps a belief that the article had bromine or a bromide and caffeine in it in some conceivable form, together with possibly many other substances, but there is nothing in the name which necessarily suggests as the basis of this preparation, any particular bromide out of the twenty-odd which bromine may form with different alkalies, nor would it necessarily suggest that it was bromide at all, for it might be one of the hundreds of other organic compounds with which bromine combines. Upon these facts, how can it be said that by the use of these words there is any such description of the article as indicates to the public the principal ingredients of which the article is composed?

"The word 'Bromo' cannot be claimed as descriptive of the ingredient bromine, because the word is also used with regard to substances which have no bromine in them, but only some one of the different bromides. Neither does the word describe any particular bromide. Neither does it give any clue to the substance other than a bromide with which the bromine may have been compounded. The word fails in fact to give information as to what the ingredient is further than a possibility as above suggested. This failure is very important, for unless the word give some reasonably accurate, some tolerably distinct knowledge as to what the ingredient is, it is clear that it is not descriptive within the meaning of that term as used with reference to a trade mark.

* * * * * * *

"There are, however, some seven different ingredients in the plaintiff's preparation and there

> is no free bromine among them, and there is no evidence as to what the substance is which the bromine (if any) had combined with before being used in the preparation, so that the words 'Bromo-Caffeine' do not in fact describe the ingredients or even give any clear general idea as to what they are."

Interesting on this point is the case of **Carnrick Kidder & Co. vs. Morson,** 1877 Law Journal Notes on Cases, p. 71. The plaintiff adopted the name "Lactopeptine"; the defendants used the word, "Lactopepsine." The following decision is by the Vice-Chancellor of England:

> "The history of the case is that the plaintiffs having invented a compound---Mr. Rogers calls it a drug---I say a compound---give to it a purely fanciful name, and it does not make it the less a fanciful name because lacto is in it and pepsin is in it, because 'Lactopeptine' does not describe any drug. There is no such thing to be found in the Pharmacopeia. * * * * When you look at the formula which is printed upon the bottle containing what is called 'Lactopeptine,' you find a variety of ingredients, sugar of milk, pancreatine, and other things which I need not mention, and so far from being a drug well known, it is nothing like a drug, and it is a composition to which the man who compounds it chooses to give the appellation and descriptive trade mark and character of 'Lactopepsine' or 'Lactopeptine.'"

It was held that "Lactopeptine" was a valid trade mark notwithstanding the presence in it of lactic acid and pepsin.

The most recent case in regard to the subject under consideration was the case of Application of La Societe

le Ferment, to register the trade mark, "Lactobacilline," and the Court of Appeals decided (by Justices Farwell and Kennedy) on June 13th, 1912, where the word "Lactobacilline" was under consideration and the opposition to the registration was made on the ground that the name had direct reference to the character of the goods, indicating lactic acid bacilli. This word was upheld as a trade mark.

La Societe Ferment, 81 L. J. R., 724, (29 R. P. C., 149).

We believe that under the above, Coca-Cola must be held to be a distinctive name. And being established that Coca-Cola is a distinctive name, the charge that Coca-Cola is misbranded, is eliminated, except as to the charge that it is in imitation of and offered for sale under the distinctive name of another article.

Reference is made by the Government to the case of **United States vs. Two Cases of Chloro-Naptholeum,** 217 Fed. Rep., 477, 483. It will be noted that this case was brought under the Insecticide Act, and the claimant relied upon the Coca-Cola case in 191 Fed. Rep., 481. The Court promptly recognized the difference between the two acts, pointing out that,

> "The first proviso of the 8th Section of the Food and Drugs Act (the distinctive name proviso) is not to be found in the Insecticide Act, nor is there any substitute for it."

This, to our mind, shows clearly that the misbranding portion of the Act (except that part referring to imitation, and distinctive name of another article) is wiped out by the proviso.

The case of **Libby, McNeil & Libby vs. United States,** 210 Fed. Rep. 148, distinctly points out that

the distinctive name of another article must be a name used in its popular meaning that is accurately descriptive of another well known food product. The proof of the Government falls far short of this.

In the case of **Worden vs. California Fig Syrup Co.,** 187 U. S. 516, the plaintiff was repelled from a court of equity under the doctrine of unclean hands. The plaintiff claimed, a product that had properties of medicine due to figs therein; and while the name might have been distinctive, there was nothing involved in this case that wiped out the misbranding by the use of a distinctive name. This case differs, therefore, in two respects from the one under consideration. The false use of a name in its primary signification, employed to designate the same, or like articles; and no statute was involved containing the same clause as the Food and Drugs Act.

In **Manhattan Med. Co. vs. Wood,** 108 U. S. 218, the same familiar equitable doctrine was involved, and distinctive name was not a defense.

Even if it were for the sake of argument conceded that the name Coca-Cola because it falsely indicated that the article was composed of "the substances Coca and Cola", was misleading at the time it was originally applied to this product, over thirty years before this suit was brought, it has since that time been so exclusively and extensively applied to the product that no one could have been deceived by the name at the time to which the inquiry in this case must relate. The question involved here is not whether the name might have misled or deceived someone in 1886, but whether it was misleading or deceptive when this suit was brought, in 1909.

Bearing in mind the uncontradicted facts that no other article has been known by this name; that this indentical compound has been advertised, sold purchased and consumed solely under this name in continually increasing quantities for thirty-odd years; that the name means and indicates to the general public nothing else than this particular article; that the exclusive right of defendant to use the name as applied to this product has been established by repeated adjudications (and several of which were vigorously contested); it is submitted that there was nothing to go to the jury on the question whether the name was misleading or deceptive.

(3). Is Coca-Cola sold under the distinctive name of another article? This is a question of fact. The record does not show any such other article.

On the proposition that Coca-Cola is misbranded because sold under the distinctive name of two other articles, we say, in the first place, that under the libellant's own proof, the words Coca and Cola are not the distinctive names of any substances. The testimony is that the words were originally and still are the name of the trees or plants from which the leaves and nuts that are known in commerce were obtained. and that in the trade the coca leaves are now known either as "coca" or "coca leaves," indiscriminately; and that cola nuts are known either as "cola" or "cola nuts." "Coca" is not, therefore, the distinctive names of coca leaves, or any substance obtained therefrom, nor is "cola" the distinctive name of cola nuts, or any of their derivatives.

As was held by the **Circuit Court of Appeals, Sixth Circuit:**

"Neither of these words alone had any absolute complete meaning, but when the words were put together to make the compound term, the ambiguity of meaning was intensified. If coca was spoken of, the reference might be to the leaves, or to a decoction, or to an extract; "cola" might refer to the nuts or to a powder or to a paste or a fluid; and so, when the public first saw the name 'Coca-Cola', it could not know, as we said in the accompanying case, whether the substance was medicine, food or drink, or whether it was intended to swallow, smoke or chew. One who had all the existing available information could only infer that the new substance, whatever it was, had some connection with these two foreign things."

Nashville Syrup Co. vs. Coca-Cola Co., 215 Fed. Rep., 527 (at 531).

If the argument of counsel were sound, then a distinctive name could only arise from a coined or arbitrary word, and this we have heretofore shown is not the law and never has been the law.

We contend that before it can be said that Coca-Cola is offered for sale under the distinctive name of another article, that the evidence must show that the name Coca-Cola in its popular meaning, is accurately descriptive of another well-known food product. The evidence certainly does not prove this.

We contend, further, that there is no proof in this record that the name Coca-Cola was ever used for another article, and therefore no proof that Coca-Cola was sold under the distinctive name of another article. The mere fact that there are such terms as coca, coca leaves, cola and cola nuts, does not substantiate the argument that Coca-Cola is sold under the dis-

tinctive name of another article. The proof shows that what is meant by Coca-Cola is the particular article manufactured by the claimant in this case; it is distinctive of this article. The proof further shows that there is no other article that has ever been on the market or ever sold or introduced by this particular name; that Coca-Cola does not represent the tree and plant of the coca and cola, nor the leaves or nuts of the coca plant or cola tree. In fact, the proof affirmatively shows that **there is no other** distinctive name that Coca-Cola could imitate or under which the product is sold.

As found by Judge LaCombe in the case of the Coca-Cola Co. vs. American Druggists' Syndicate, 200 Federal, 107:

> "There is not in the record any satisfactory evidence that a combination of de-cocanized coca with cola has ever been used, or is usable, in medicine or in the arts or otherwise than as a soft drink,"

and the finding is equally applicable to the record now before this Court.

And, as we have already argued, a new name for a new article may be, and often is, formed by the **combination** of names previously well known; and the name does not necessarily indicate that the new article is composed of the substances whose names are used in forming the new compound name; as for example, pineapple. Could it be argued that pineapple is sold under the distinctive name of another article, because we have the pine and the apple?

The uncontradicted evidence in this case shows that a flavoring material known and referred to in the rec-

ord as "Merchandise No. 5," and which is composed of de-cocoanized Coca leaves and Cola nuts, is a part of the formula of Coca-Cola, and is always used in the manufacture of it. These were two foreign words, neither of which was at the time known in this country to anyone except chemists and scientists; and if it were necessary, as contended by adverse counsel, that some substances from the coca leaves and cola nuts should enter into the compound in order to justify the name, it seems to us that this flavoring extract would be sufficient for the purpose. The name certainly does not indicate that the article is composed exclusively of coca leaves and cola nuts; and if this was the case, the name would be descriptive and therefore could not be protected by trade mark. So the fact that the claimant has obtained a trade mark on the name is evidence of itself that the name is not intended to be descriptive of the ingredients of the article.

It is true that several of the witnesses on behalf of the government testified that they could not detect in the smell or taste of the article the presence of any element derived from coca leaves; but there can be no doubt from the evidence that an extract from the coca leaves is used in it, and it is submitted that the jury could not be permitted to infer that the name was deceptive or misleading merely because centain witnesses are unable to recognize any particular flavor or odor in the article which they can trace to the presence of the coca leaves.

It is true that the proportion of coca extract which apears in the product of Coca-Cola is only about one part in 5300; but on the other hand, the proportion of vanilla in vanilla ice cream, which gives the cream

its name and characteristic flavor, is only about one part in 290,000.

Record, p. 1811.

(4) Is Coca-Cola an imitation of another article? This also resolves itself into a question of fact. The record does not disclose that it is an imitation. No other article is shown that this product could possibly imitate. Could it be argued that because there is a well known substance called ivory that the equally well-known "Ivory Soap" is in imitation thereof. Or, could it be said that this soap was offered for sale under the distinctive name of the bony substance? This same argument would apply to pineapple, soda-water,---in fact, to all names unless they were purely fanciful; and this could not have been the intention of Congress to so limit, because the very idea was to protect trade-names that had become distinctive, or that that should become so.

And so, also, it is not true that, as alleged in the information, the product Coca-Cola is "an imitation of the articles or substances coca and cola." For in the first place, it is impossible, we submit, for any single article to imitate two other and different articles at the same time. It may **resemble** both the others in certain particulars; but in so far as it resembles the one it will be unlike the other, and therefore it cannot as a whole imitate either, and certainly not both. The sphinx, for instance, is said to have had the head and face of a woman, the body of a lion and the wings of an eagle. In certain particulars, it **resembled** each of them; but we submit it could not properly be said to be an **imitation** of any of them or all of them.

But furthermore, according to the contention of counsel for the Government, the "substance coca" is the leaves of the coca plant, and the "substance cola" is the nut kernels of the cola tree, in the dried condition in which they are sold in the market; and it is utterly preposterous to say that the syrup attached in this cause imitates, or even resembles, these substances.

No question of fact was in this case to leave to the jury on the question of imitation and sold under the distinctive name of another article.

It does seem clear that the District Court and the Circuit Court of Appeals correctly held that caffeine could not be considered an added ingredient, and that they further held correctly, that this is not a statute passed for the protection of the public health, except as the public health is protected by the prevention of adulteration and misbranding. It would appear to be a contradiction and an unwise law that would allow the use of such poisons as morphine, opium, heroin, etc., or any derivatives or preparations of such, without even a test under the law; and for the same law to hold that you must go to a jury to find out if caffeine, ---a substance that has been used in foods for ages, ---should be used in food products or not. Such a construction would make the law rediculous and impossible.

It further appears that the District Court and the Circuit Court of Appeals held properly that Coca-Cola is a distinctive name, for to have held otherwise, would

have been to destroy the very thing that the Act was designed to protect, to-wit, trade names.

Respectfully submitted,

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